

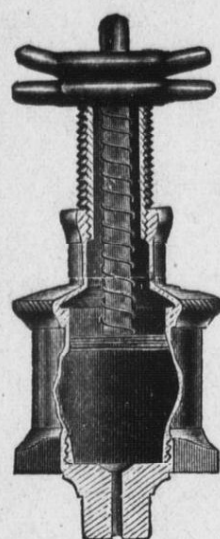
The United States MILLER

AND THE MILLING ENGINEER.

Fifteenth Year.—No. 6.

MILWAUKEE, JUNE, 1890.

Subscription Price, \$1.00 Per Year.



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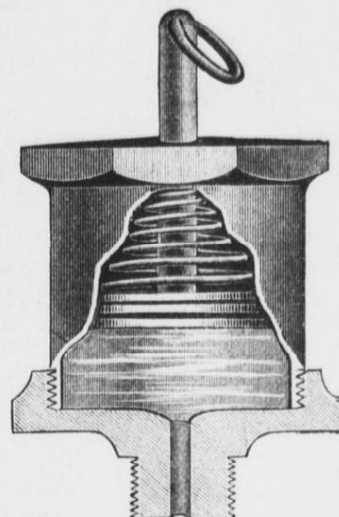
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Cawker's American Flour Mill and Grain Elevator Directory for 1890-'91

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Is now ready for delivery. Price Ten Dollars. It is the most complete of any we have ever published, and possesses many new and valuable features. Send in your orders *now*.

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"The Difference is so Apparent."

THE RICHMOND Grain Cleaning Machinery AND BRAN DUSTERS

THE LAKE OF THE WOODS MILLING CO. (Limited).

KEEWATIN, April 7th, 1890.

RICHMOND MFG. CO., Lockport, N. Y.:

Gentlemen--Being asked to give my opinion regarding the two No. 7 Richmond Scourers recently purchased from your Company, would say, that I have your machines working alongside of two..... Scourers, each pair taking the same sized stream of wheat, and consider the work done by the Richmond Scourers in every way superior to the..... The difference is so apparent, that we intend putting a Richmond and.....together, so as to clean the wheat evenly.

Yours truly,

GEO. H. KELLY, Head Miller.

RICHMOND MANUFACTURING CO.

LOCKPORT, N. Y., U. S. A.

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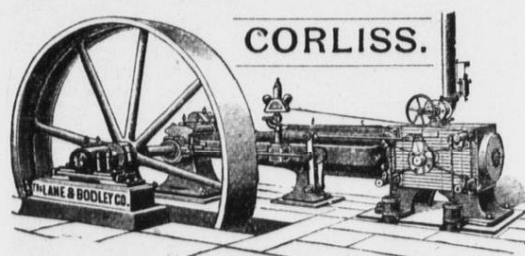
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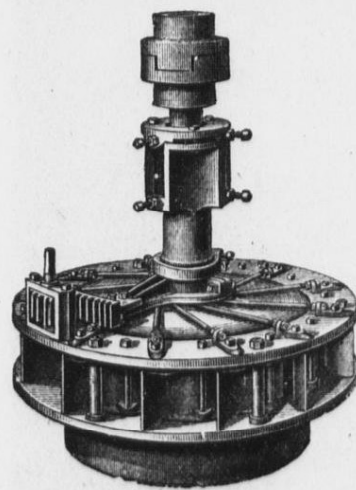
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Write us for NEW PRICES before buying elsewhere. New shops and New Machinery are provided for making this Wheel. Address,

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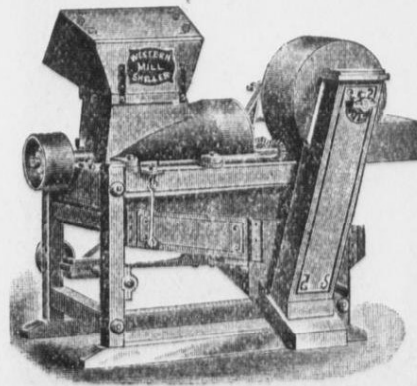
Takes up but little room, runs at low rate of speed, requires no attention. It is in every respect the

Best Sheller ever offered to the Public.

Please mention this paper. Write for full particulars to

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Gray's Noiseless Belt Roller Mill.

Known and recognized as the Standard the world over. More than 35,000 pairs of Rolls in use in Gray frames. More in use in Minneapolis than all others combined. The original Solid Iron Frame and Noiseless Belt Drive. The best adjusting devices. The best Shaker feeder. All the latest improvements.

Don't buy inferior machines because they are cheap.

Gray's Improved Centrifugal Reel.

Perfect separations, great capacity, light running, handsome design, fine finish. All driving connections and oil holes outside of frame. Inside of reel free from complicated gears, tipping buckets and other abominations. A perfect combination of simplicity, strength and durability. It costs little, if any, more than poorer ones. Put it in your mill, and it will win your friendship.

Gray's Patent Flour Dresser.

Used in ALL of our mills for the last 3 years, and the first word of complaint is yet to be heard. 8 ft. machine does the work of old style 16 ft. or 18 ft. reel, does it better, does it with less power, and takes up less room. Guaranteed to be unequaled by any similar machine, and will speak for itself, if you give it a chance. Sold at reasonable prices, and payment not expected if it does not do as well as any other flour dresser. If it does better, you will soon find it out.

The Reliance Purifier.

"We consider the Reliance Purifier the best purifier in the market at the present time."—WASHBURN-CROSBY Co., Minneapolis, Minn.

"We never saw anything better."—LA GRANGE MILLS,
Red Wing, Minn.

The Reliance Sieve Scalper.

This is a machine with which we wish our customers to become well acquainted. It has all the essential qualities of a perfect machine—perfect separations, immense capacity, almost runs itself, takes little room, and will improve the results in any mill. One machine will handle one break in a 1000 bbl. or five breaks in a 200 bbl. spring wheat mill, and just as perfect work on winter wheat. We use them in all our latest mills, large and small, and no machine we have ever brought out was better received by millers. If you are using the old style scalpers, it will pay to investigate this.

The Beall Corrugation.

By special arrangement with Messrs. Frank Beall & Co., we are the only mill furnishing establishment in the country authorized to equip mills with this corrugation. It is used and endorsed by many of the largest and best known mills in all sections, and possesses features of undoubted excellence that commend it strongly to experienced millers. Specially adapted to the first, second and third breaks. Circulars, testimonials and full particulars on application.

Complete Mills of Any Capacity.

Our facilities are without doubt the largest, experience the most extensive, machines the best and most favorably known, record the most uniformly successful, and consequently our work is the most reliable. Building a mill is a venture that takes money, and it pays in the end to trade with a reliable establishment that furnishes only work of the best quality, offers none but reasonable guarantees, and has the means to make its guarantees good. Prices little, if any, higher than you have to pay for inferior work, results are certain, no experimenting at purchaser's expense.

MACHINES IN STOCK FOR PROMPT SHIPMENT.

CATALOGUES, PRICES AND ESTIMATES ON APPLICATION.

The United States MILLER

AND THE MILLING ENGINEER.

Fifteenth Year,—No. 6.

MILWAUKEE, JUNE, 1890.

Subscription Price, \$1.00 Per Year.

THE "CHRONOS" AUTOMATIC GRAIN SCALE.

COUNT, weigh or measure everything you buy" is the maxim long since adopted by all careful dealers in merchandise as a guard against errors or fraud. Millers especially have reason to use such means as will determine quickly and accurately whether they are receiving every pound of wheat they have to pay for or not.

To effect this object most successfully a correct automatic weighing scale is required. Millers and grain dealers in Europe have enjoyed the privilege of using such a scale for a long time, Messrs. C. Reuther & Reisert, extensive manufacturers of scales of all kinds at Hennef-on-Sieg, Germany, having proved to the entire satisfaction of the public that their "Chronos" automatic scales would meet the most exacting requirements.

This firm has now established a branch house at 74 Cortlandt street, New York, and Mr. W. Reuther of the Company is now introducing his valuable scale to the American public.

In describing the work and the peculiar advantages of the "Chronos" scale, the makers say:

"If any intelligent American miller were asked what work in a flour mill is to-day in greatest need of automatic machinery, we believe he would unhesitatingly say that of weighing grain and stock. It is singular that American mills should be lacking in this particular, when in all other operations they are more nearly automatic than the mills of any other country, and it is indeed remarkable that American inventive genius, which has so amazed the world by its achievements in almost every field of industrial and scientific activity, should have failed to provide a satisfactory device for ascertaining and recording automatically the weight of material passing into or through a flour mill. Attempts have been made in this direction from time to time and with now and then a degree of success, but we believe it can be safely said that not one the automatic grain weighers now used in America, has in every respect sustained the ordeal of prolonged work.

"While of course the 'Chronos' will be judged by its work and not accepted on faith, it is proper to say that this machine has been adopted since 1883 as a standard by the body known as the 'Kaiserliche Normal Aichungs Kommission' that is to say the commission for standard weight and measures of the German empire. Since that time it has been in constant official use in custom houses and on corn exchanges, an endorsement which must have weight even with the most skeptical.

"If we look for the reason why the advent of a truly automatic grain scale has been so long delayed, we shall find it in the unusually severe requirements which a machine of this kind must satisfy. To be an effective checker, a weighing machine should be capable of determining, with the utmost accuracy, the weight of any quantity of any kind of grain or seed, and to do this, no matter what kind of work may be in progress in the mill. Moreover, such a machine must act not merely as an automatic recipient, but also as an automatic discharger, as otherwise it would obviously be impossible to make use of it in a really automatic system. It must be ready to take its place at any and every point, whether between two machines or whether it is merely required to weigh and register the material passed from a belt conveyor to a worm or bin. A weigher should not be liable to take injury from the presence of small foreign bodies in grain, and its mechanism should be as little sensitive to dust (of which some wheats notoriously contain a heavy proportion) as possible. The friction of its working parts should be reduced to a minimum, so that after years

of hard wear it may still be a reliable instrument. It is highly desirable that its construction should admit of the accuracy of its work being tested at any minute, nor should this operation occasion any interruption to the running of the mill; if it exhibits any trifling inaccuracies it should be possible to correct them without making use of a second weighing machine.

"All these demands are met by the 'Chronos' weigher. This automatic weigher consists essentially of a beam-scale of the usual make, provided with two arms of equal length, to one of which is suspended a vessel or recipient for the grain, such recipient being capable of rotation on an axis, and being provided with two apertures for the respective operations of receiving and discharging, while

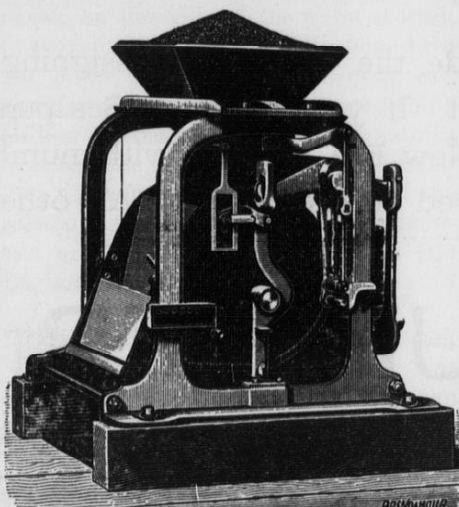


Fig. 1.

from the other arm hangs a beam-board which will take any ordinary kind of weight. Over the recipient is placed a hopper and underneath play two valves, or rather gates, which regulate the flow of the feed. The grain pouring through the hopper soon begins to fill up the recipient, until suddenly the upper gate partially closes, shutting off the greater part of the feed and letting in only two thin streams of grain, which together make up the exact weight set on the beam-board. As soon as that point has been reached a stud attached to the pointer of the beam-scale comes in contact with a knee-joint which serves to support the second flap and bends the former down. The effect of this is to completely close the inlet, while simultane-

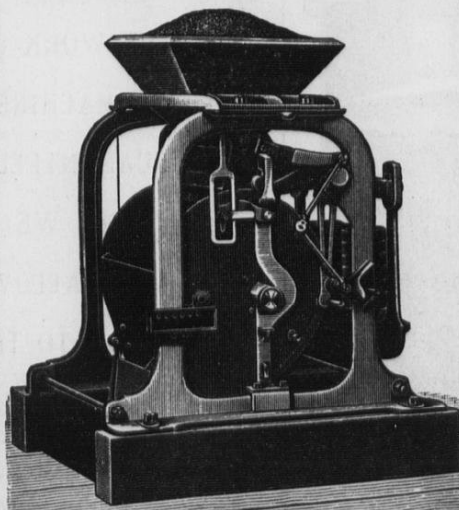


Fig. 2.

ously a hook which has kept the recipient in an upright position for taking its feed is released. Then the recipient, making a slight revolution of about 40°, tips forward, and this movement is sufficient to empty it of its contents; but as soon as this has been accomplished it regains its former position, whereupon the two inlet valves are opened, and it is again held fast by the hook. With the reentry of the feed, the operation already described is repeated. Each revolution, and therefore each discharge of a given weight of grain, is registered on a dial that is attached to the front side of the scale. The two illustrations which are here published afford a clear enough idea of the action of the recipient as well as of the modifications exhibited by the 'Chronos' machine. To reduce friction to a min-

imum and to insure the smoothest possible work, it has been the aim of the makers of this weigher to shorten, as much as possible, the arc traversed by the recipient in its tipping motion; hence it has been provided with an outlet as distinct from the inlet. Moreover the recipient has been so shaped and hung that while the grain, seeds or other material is being fed through the inlet, the bottom W of the recipient remains in a horizontal, or in nearly a horizontal position. On emptying, the recipient has to make a relatively trifling revolution, and by this means the angle of the discharge is rendered but little greater than the feed angle.

"The setting of the scale is a very simple operation. By a turn of a small lever the mechanical parts of the weigher and the beam-scale can be entirely disconnected. The beam will then swing loose just like the beam of any ordinary scale, while the pointer will play freely whether the board be weighted or not. It is thus easy at any moment to set the weigher by means of its own scale, and to carry this operation out in about half a minute without in any way interrupting the work of the mill. If any slight discrepancies should be manifest in the work, they can be quickly corrected by moving forward a little weight. It is also stated that when once this weight has been set in its proper position the machine will weigh accurately and continue to do so.

"If desired, the whole apparatus can be enveloped in a sheet-iron casing, which will leave no part exposed, except the glass face of the dial register. The casing can then be locked and the key delivered to the foreman of the mill or some responsible person,

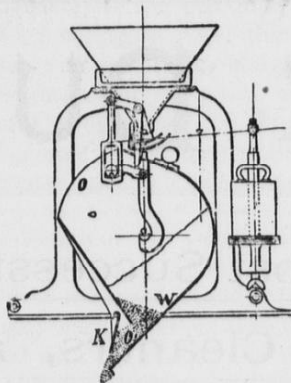


Fig. 3.

so that the possibility of any tampering with the mechanism by curious boys or idle operatives, will be entirely removed.

"Further particulars can be obtained from Messrs. C. Reuther & Reisert, 74 Cortlandt street, New York, N. Y., where the machine can be seen at work."

CONVERTING HEAT INTO ELECTRICITY.

FOR fifty years electricians have been trying to discover a method of converting heat directly into electricity. Until recently no results of commercial value have been obtained. Such a method seems now to have been discovered or invented by a young man from Maine, H. B. Cox. If Mr. Cox's claims are just—and capitalists have confidence enough in them to have formed a company with a capital of \$1,000,000—the whole system of power and lighting will be revolutionized and steam will be regarded as too expensive for ordinary uses. It is impossible to estimate in advance the immense value of Mr. Cox's invention, but it is certain that he expects almost incredible results from it and that he has inspired with his confidence some of the shrewdest businessmen of Hartford and Boston.

As has been said, a company has been organized and incorporated in Maine, where Mr. Cox was when some Hartford men met him. Since then the business has all been brought to Hartford, and all that has been done since has been done

at the factory of the Pratt & Cady company. The capital stock is \$1,000,000, and none of it is now for sale. Francis A. Pratt, of the Pratt & Whitney company, is the President; R. N. Pratt, of the Pratt & Cady company, is Vice-President, and Ernest Cady, of the same company, is the Treasurer. E. Henry Hyde, of Hyde & Joslyn, is a stockholder, one of the directors, and legal adviser of the new company. All the patents asked for by Mr. Cox have been allowed, and they will be issued in a few days. Both foreign and domestic patents have been applied for.

The apparatus used for converting the heat into electricity is so simple that the company does not dignify it by the name of machine. By Mr. Cox's method heat is changed to electricity as simply as water is changed to steam. His furnace is all that may be seen. From glowing coals comes the subtle current, without the aid of boiler, engine, or dynamo. A jet of gas can be made to run a dental machine, a sewing-machine, and anything which requires no more power than these. No power has ever been discovered that is half so cheap as will be electricity obtained by this new process. This has been the dream—apparently impossible of realization—of all electricians, and even the wizard of Menlo Park has almost despaired of its ever being brought about. Yet a young man only 28 years of age seems to have solved the puzzling problem.

Before the company was formed Mr. Cox had a furnace at home by which he ran many electric lights. This furnace was injured in being transferred to Hartford, and a new one of the same size has not yet been completed. Experiments and private exhibitions have been conducted here on a smaller scale, but in a short time the company intends to show to the world that with the power thus obtained anything that steam or electricity now does may be done. Several members of the company saw what could be done with the furnace of Mr. Cox before any attempt was made to remove it. The one now being built will be an improvement on the old one, and the results from it are expected to be correspondingly better.

Most of the stock of the company is owned in Hartford. Some of it is held in Boston. The whole affair has been kept secret until the company should be ready to make it public. Even now the officers of the company are unwilling to talk for publication, but gossip about the new invention has been so frequent in Hartford and elsewhere that it seems proper to print a general statement. The officers of the company say they will be ready for public exhibition in a few weeks.—Hartford Courant.

An invention, in the sense of the patent law, means the finding out, the contriving, the creating of something which did not exist and was not known before, and which can be made useful and advantageous in the pursuits of life, or which can add to the enjoyment of mankind. In other words the thing patented must be new; and be useful to an appreciable extent, though the measure of that usefulness is not material. Any degree of utility appreciable by a jury is sufficient, upon the question of utility, to sustain a patent.

OFFICE OF

Superlative Purifier Manufacturing Company.

MILWAUKEE, WIS., June 2d, 1890.

TO THE MILLING PUBLIC:

Our attention has recently been called to a circular having on the front page a cut of our New Era Scalper, with a description of its operation, showing the advantages derived from the use of the sieve scalper. We cannot but feel flattered that what has been considered a reputable Mill Furnishing House should have published an article on the merits of the New Era Scalper, although giving it a new name. The parties must have secured one of the New Era Scalpers to have copied it so closely. They have not, however, taken out a license for manufacturing our machine. We cannot see why they should try to impose on the milling public by offering our Scalper for sale without a license. They must know that the New Era Scalper is broadly covered by patents Nos. 420,802; 420,803; 420,723 and 423,258, granted to Mr. A. Hunter.

While we do not wish to appear in the light of bulldozers, we at the same time believe that we have rights in this matter, which should be respected, and hereby notify millers that we will hold them responsible for damages for using any Scalper copied after the New Era, or any Scalper that infringes any of the claims of the above patents.

MILLERS TAKE WARNING! Do not be made the victims of designing manufacturers, who, through their cupidity, would involve you in a Patent Law Suit. If you purchase Scalpers from us or our authorized agents, bearing our name and the title of the machine, New Era Scalper, with numbers of patents, you will not buy a Law Suit, as ours was the first Sieve Scalper placed on the market. All others are merely base imitations.

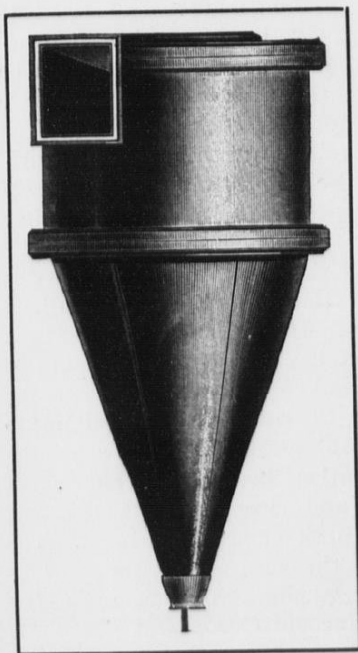
Respectfully,

SUPERLATIVE PURIFIER MFG. CO.

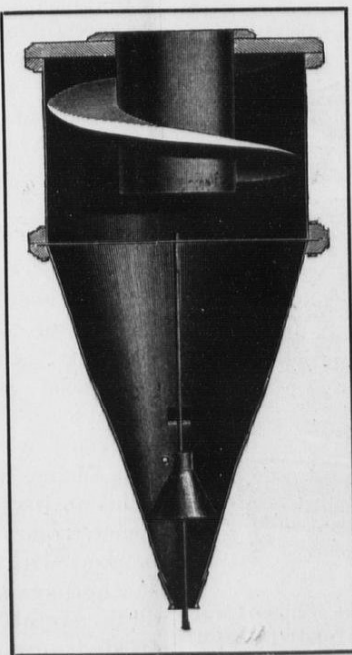
MILWAUKEE, - - WISCONSIN.

VORTEX DUST COLLECTOR

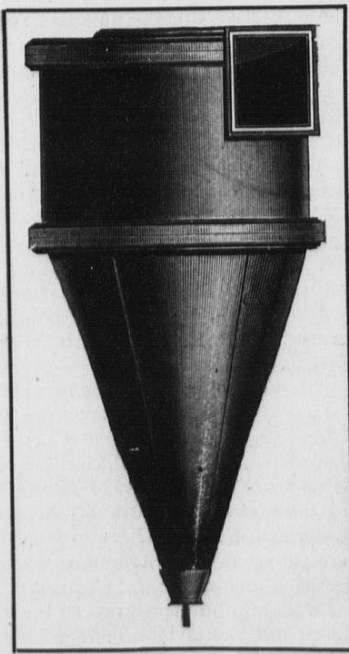
The Best and Most Successful Dust Collector manufactured for
Purifiers, Grain Cleaners, and all dust producing machines.



WE OWN PATENTS
COVERING THIS
COLLECTOR, AND
GUARANTEE
EVERY USER AND
PURCHASER
AGAINST ANY
INFRINGEMENT
SUITS, SHOULD
ANY BE BROUGHT.



THE WORK OF
THIS MACHINE IS
GUARANTEED,
AND WE
WILL ALLOW
ANYONE TO TEST
IT THOROUGHLY
BEFORE
PAYING FOR IT.



No royalty has been collected on any Collector of our manufacture. We challenge anyone to name an instance.

Millers wanting a thoroughly reliable Dust Collector at LOW PRICES, address

VORTEX DUST COLLECTOR CO.

MILWAUKEE, - - WISCONSIN.

UNITED STATES MILLER
AND THE MILLING ENGINEER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

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SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.
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To Canadian subscribers, postage prepaid..... 1.00
Foreign subscribers..... 50c.
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Bills for advertising will be sent monthly, unless otherwise agreed upon.
For estimates for advertising, address the UNITED STATES MILLER AND THE MILLING ENGINEER.

[Entered at the Post Office at Milwaukee, Wis., as mail matter of the second-class.]

MILWAUKEE, JUNE, 1890.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER AND THE MILLING ENGINEER. You will thereby oblige not only this paper, but the advertisers.

THE Kansas Millers' Association will meet at Newton, Ks. July 10th and 11th.

IT is reported that an English syndicate has made a proposition to purchase 21 mills in North Dakota.

THE Northwestern Miller will be issued daily during the session of the Millers' Convention and we are all looking for something unusually good.

MILL-OWNERS desiring to reach the dealers in flour, grain and feed in all parts of this country and Europe, should send for "Cawker's American Flour Mill and Grain Elevator Directory for 1890," which contains all desired information. Price \$10, postpaid to any address. See adv. on first page.

SECRETARY REYNOLDS of the Michigan Millers Association is a pusher. He proposes to leave nothing undone that he can do, that will tend to give Michigan the best State organization of millers in the country. Its members have already seen its benefits and we trust that all the millers in that State will join very soon.

IN answer to a correspondent: The Southern Millers' Association was organized Jan. 23, 1889 at Nashville, Tenn. Mr. Chas. Ballard of Louisville, was elected permanent President; John J. McCann, of Nashville, Vice President; L. H. Lanier, of Nashville, Secretary and Treasurer. A large number of millers from Tennessee, Kentucky, Georgia and Alabama are on the roll of membership.

A REVISED Constitution will be submitted to the Convention at Minneapolis for debate and adoption. Much thought and labor by experienced men have been expended upon it. A number of changes have been made in it since we printed it in February last. It is believed that it will meet all requirements. Elsewhere in this number we publish the proposed constitution as amended.

A GENERAL meeting of Kansas millers is called to meet at Newton, July 10th and 11th. C. B. Hoffman of Enterprise, Ks., is the Secretary of the Kansas Association and full particulars of the program of exercises and entertainment can be had by addressing him. Kansas is a banner state for most everything and we look for an important Association in that state very soon.

BRITISH financial journals are delighted to record the prosperity of the Canadian Pacific R. R. and intimate that it will be very likely to continue. There is little doubt but what they are correct unless our Congress should take the notion to amend or abolish our wonderful Interstate Commerce law. Judging from past experience the public and the railway corporations have had quite enough of it and would like to attend its funeral.

THE Arkansas Millers State Association met at Fayetteville, June 4, and effected a permanent organization, with officers

as follows: President, J. W. Massangale of Fayetteville; Secretary and Treasurer, L. D. Petross of Springdale; Executive Committee, D. B. Huffman, T. R. Lane and A. Catlett. This committee will meet for business June 20 in Springdale.

On motion a Constitution and By-Laws were adopted.

The next annual meeting will be held in June, 1891.

IN an unsolicited letter from The Edw. P. Allis Company, of Milwaukee, received by the publisher of THE UNITED STATES MILLER AND MILLING ENGINEER, in May, 1890, speaking of its value as an advertising medium, they say:

"Perhaps we could give no better expression of our opinion of its value, than the order placed with you some time ago, doubling our space. We may add to this that in our letters of inquiry your paper is mentioned fully as often as any of its competitors, and we believe it is entitled to its full share of recognition as an advertising medium."

WE regret to note that our British milling exchanges are not as good, generally speaking, as formerly. We look through them carefully but during late months we find little of sufficient interest, on this side of the water at least, to warrant reproduction. We hope both The Miller and The Millers' Gazette will have representatives at our approaching Millers' Convention. It would be a stroke of enterprise worthy of high commendation, aside from awakening the ideas of the editors to the fact that all milling interests are by no means confined to Old England and its colonies.

THE Railway Association of Michigan, Mr. R. E. Downing, Secretary, has seen fit to snub the millers of Michigan by not conceding any reduced rate whatever on the occasion of the excursion to Minneapolis, June 17. Michigan millers therefore will be the only ones obliged to pay full fare and they will only have to do so to Chicago. It is supposed that some legislation last winter, prejudicial to Michigan railway interest, is the cause of this evident retaliation at the expense of millers. It will certainly not be forgotten. Secretary Reynolds, of the Michigan Association, and Secretary Barry, of the National association, have labored in vain to secure the same rate from Michigan points to Chicago as other roads have given, but so far have been unsuccessful.

THE International Telegraph Conference now in session in Paris has not and is not likely to make any new rules in regard to the length of words to be used in the code system. Sir James Anderson, a delegate, says, however: "The commercial public should be warned that, sooner or later, present abuse of the code system will be stopped, to the great inconvenience of those firms who are building up a huge mass of made-up words, syllabic combinations having the appearance of words only, and unknown to any language. This practice, which is growing, is unfair, if not illegal, and contrary to the convention by which all telegraph administrations are bound, and will some day have an abrupt ending, especially if ever there is Government control of any kind. As far as we know, there is no one thinking of interfering with the use of legitimate words which are to be found in the eight authorized languages."

THE most important secret society gathering of the year 1890 will be the biennial Knights of Pythias Conclave to be held in Milwaukee during the week commencing July 7 next. The occasion will bring 100,000 or more members of the order to Milwaukee, and 150,000 strangers who are not members of the order. The sixteenth session of the Supreme Lodge, the first Encampment of the Uniform Rank, and the first session of the Supreme Temple of the Pythian Sisters, will be among the

attractions of the week. The military feature will be prominent. Twelve thousand uniformed knights will take part in a grand parade, and nearly fifty divisions will compete for the drill prizes which aggregate \$4,800 in value. Visiting brass bands will also compete for \$800 worth of prizes. Numerous formal receptions will be given to the city's guests, and on Thursday evening there will be the grandest pyrotechnic display ever seen in the United States.

NO capable man can afford to devote his time, labor and ability to the service of any association for the benefit of millers in general without reasonable pay for his services, and as a general rule we think there are few millers that would object to voting for and paying a good salary to an efficient secretary. They certainly would not hesitate for a moment if they could by any means realize the actual duties required of a good secretary. We trust that millers will think of this matter and act accordingly. There would to-day be an active thriving millers association in every milling state and a more powerful and united national association if proper well paid men had invariably been chosen as secretaries. It costs but little more to run a large and effective association than a small one; but millers must not think that the secretary can do everything, even if well paid. They must back him up by their personal attendance at all regular meetings and other assistance when needed.

OUR northwestern contemporary appears to be "A'most too previous" in suggesting a secretary who is always the appointee of the executive committee of the Millers' National Association, especially in face of the fact that the present incumbent, Mr. Frank Barry, who has served the Association in a highly creditable manner during the past year, is a candidate for the position. At any rate, we are willing to wager that no one connected with any milling journal, either as correspondent or otherwise, will have that honor thrust upon him. The gentleman suggested is the regular St. Louis correspondent of The Northwestern Miller.

The selection of The Northwestern Miller as the official organ of the Association together with the appointment of its owner as assistant secretary, at one time seriously interfered with the harmony of the Association and the milling press generally—so much so, in fact that the genial gentleman (Mr. Palmer) resigned said office both out of regard for the welfare of the Association and the best interests of his journal.

If the Association is to have an "official newspaper," The Northwestern Miller, which is the only real milling journal published weekly in this country, is certainly entitled to the honor, for it is issued weekly and further, because it has spent time, money and well directed labor in its behalf. On the whole, however, we think it probable that the Association will try to steer clear of any special newspaper alliances although it is no more than just that those who have served its interests faithfully and constantly should receive some mark of courtesy.

MILWAUKEE REVIEW.

THE Milwaukee flour market has not been brisk during the past month. The hope cherished by many that the firmness of our wheat markets would soon be reflected by the European markets has not yet materialized. It is true they did respond to a limited degree and some fine orders were taken, but the great quantity of wheat and flour constantly keep afloat, for their markets hang like an old style "mill stone about the neck." Some of our millers predicted 70c wheat again on this crop, and at the present writing it is going that

way at a rapid rate, but we fear that class will also be disappointed. Good No. 2 sample wheat is 87c to 93c now and No. 3 to "not graded" from 87c down to 80c according to condition, while No. 2 spring in store is 85½c.

Nominally, flour is held at the following figures here.

No. 2 hard spring wheat, patents in bbls.	\$5.00@5.25
" soft	4.75@5.00
No. 3 wheat in sacks	4.50@4.75
Clears, choice baker's	3.50@3.75
" No. 3 wheat	3.00@3.25
Straights, choice baker's	4.25@4.50
" No. 3	3.75@4.00
Low grades	1.50@2.50
Winter straights, in bbls.	4.25@4.50
Rye flour, in sacks	2.75@2.85
" bbls.	2.95@3.25

To effect sales a concession of 25c per bbl would have to be made. However, the mills have not a very large stock and they will doubtless hold what they have at full prices, as most of the mills are now shut down and a disposition on the part of all to take their midsummer "shut down" and let their men "go a fishing."

Careful inquiry developed no orders of consequence and a general indifference as to the future of the business. The only thing just now taking their attention is the "Millers' National Association" convention to which they all hold special invitations by the kindness of the Minneapolis millers. The writer also holds one of these neat and expressive little "billets" for which he is indebted to The Northwestern Miller.

That wide awake progressive milling paper has always contributed very largely to the success of these millers' conventions and will—we feel confident—cover itself with glory. But stop! I am straying from the "Review" in my anticipation of the royal good time at Minneapolis.

Dearth of orders is no uncommon thing at this time of year. Neither is the disposition of the millers to go fishing, but this state of affairs has reached back into the past months that should have been full of business. We have often during the past year heard the assertion: "There is no more wheat in this country now than we need for our own bread and seed," but the present conditions seem to disprove this declaration. There has been a very respectable export of flour, and fairly large quantities of wheat, and yet there seems to be plenty of wheat to mill where there is any demand for the flour. The conclusions are therefore irresistible.

1st. That there is more wheat grown in this country than its people require for bread and seed.

2d. That the milling capacity of the country is now beyond the requirements of its people only.

3d. The surplus products of our mills must find a market in the old world. Otherwise many of our mills and millers must find other employment, or new and more economical methods of reducing the grain.

To the cultivation of the export markets, therefore, our best efforts should be tarined.

DONALDSON.

MILWAUKEE, JUNE 14, 1890.

MAKE NO MISTAKE!

THE OFFICIAL ROUTE FOR THE
MILLERS IS VIA THE

WISCONSIN CENTRAL LINES

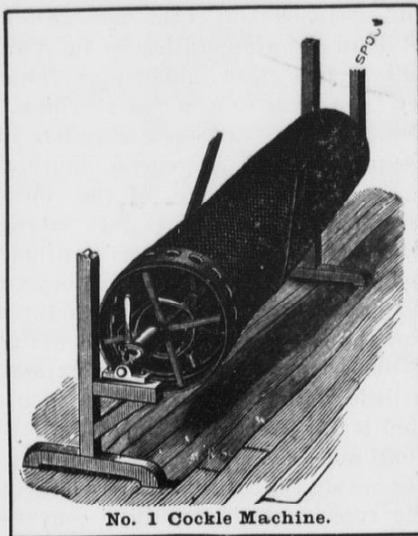
The delegates from the East and South will go this way in special equipment to be provided, and arrangements have been made looking to a comfortable and enjoyable trip.

Trains leave the Grand Central Passenger Station, Harrison St. and Fifth Ave., Chicago, daily at 5:00 P. M. and at 10:45 P. M., Milwaukee at 7:20 P. M. and 1:45 A. M., and returning leave Minneapolis at 12:45 P. M. and 6:25 P. M. respectively. Pullman Vestibuled Sleeping Cars and the Central Famous Dining Cars on all trains, serving meals while en route through the wonderful farm lands of Illinois, Wisconsin and Minnesota. Full information in regard to rates, tickets and other matters pertaining to the trip may be obtained from representatives of the Wisconsin Central Lines upon application to

LOUIS ECKSTEIN,
Asst. General Passenger and Ticket Agent,
MILWAUKEE, WIS.

ATTENTION, MILLERS!

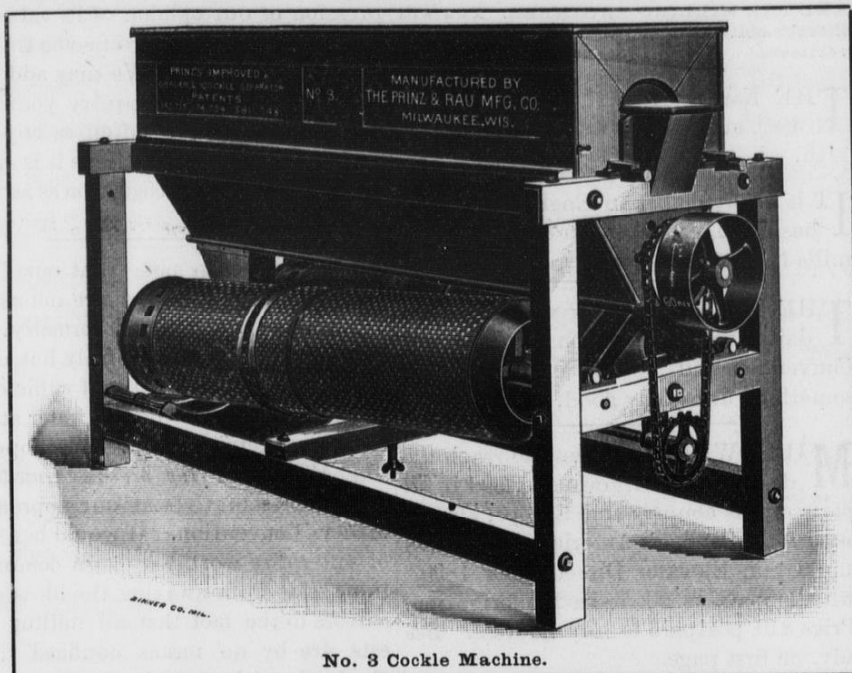
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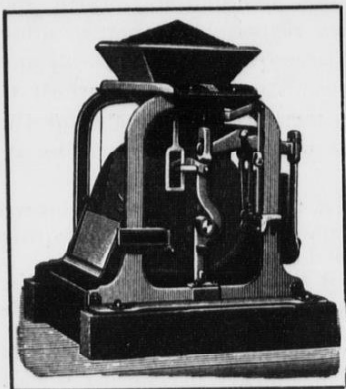
on the market, built in the most substantial manner, with **Cockle Reels** made of **Sheet Steel**, which will outlast five or six zinc reels, and with the new and an Improved indentation, patented by F. Prinz, will do more and better work than any other machine.



No. 3 Cockle Machine.

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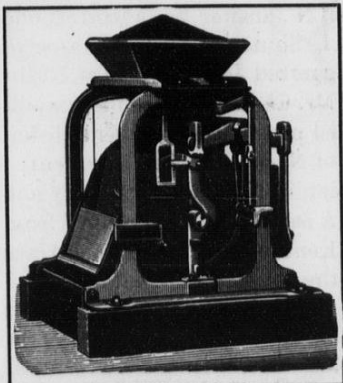
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OUR AUTOMATIC SCALES HAVE BEEN IN THE MARKET FOR NEARLY 15 YEARS. They are the only Automatic Grain Scales that comply with all the requirements and that have proved to be reliable and accurate after years of continuous working.

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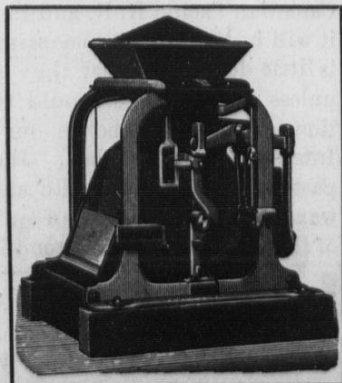
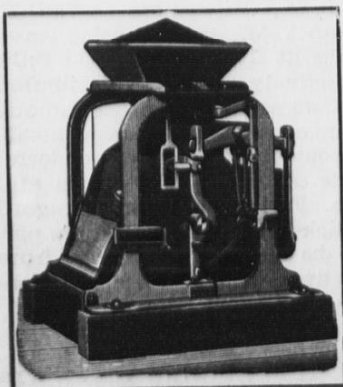
It is not a weighing machine, but a real automatic, equal armed beam scale; it can be made to balance empty and full at any moment without stopping the work of the mill.

The Chronos is manufactured in 15 sizes from 10 lbs. to 2400 lbs. per operation.

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[From our regular correspondent.]

OUR LONDON LETTER.

GLORIOUS weather for the crops has prevailed during the latter half of the month of May and the country now presents a very beautiful appearance, so that farmers may be said to be almost universally congratulating themselves on fair prospects for a good all-round harvest. The hay harvest will commence in the South of England during the coming week, but the cutting will not be common until the 10th. Corn reports have come in during the past week from nearly every country in Europe, and from several other countries. Prospects are still favorable in France, though there are complaints of too much rain; in Russia the crops have been saved from serious injury by an abundant rainfall, which was badly needed; rust and some damage from thunderstorms are complained of in some cases in Austria-Hungary, where in other respects the outlook was hopeful; and from Germany, Belgium, Holland and Spain the accounts are altogether satisfactory. In Algeria, on the other hand, immense swarms of locusts have descended upon the country, and the harvest in Morocco has been seriously deteriorated by an excess of rain. The favorable reports in Europe with the weakness in the markets on your side of the water are the reasons for the prices here giving way like they have during the past ten days. English wheat of a fair quality is fetching 34s. per quarter and foreign wheats for 480 lbs. as follows:—California 35s. 6d., Australian 36s. 6d., Russian Arima 33s., Danubian 32s. 6d., Oregon 36s., La Plata 32s. 9d., New Zealand 34s. 3d., Indian 30s. to 33s. 3d. and in some cases good Calcutta 34s. 9d.

Mr. J. A. A. Buchholz, a well-known milling engineer and expert, shot himself at Bristol on May 13th for a most trivial cause. The deceased gentleman was, I believe, the first engineer to erect an automatic flour mill in England and at the time of his death was consulting engineer for two large flour mills in England and had a retaining fee from Messrs. Greenwood & Batley, engineers of Leeds, of £400 a year for five years, three of which had not expired. The inventive genius of his father, the late Mr. G. A. Buchholz, seems to have descended to the son, who took out a number of patents for improvements in flour milling machinery. At the inquest on Mr. J. A. A. Buchholz, the jury returned a verdict of temporary insanity. A letter was found in his pocket containing a request that his body might be taken to the hospital for dissecting purposes.

A council meeting of the National Association of British and Irish Millers was held at the Mark Lane Corn Exchange of May 19th, when a new secretary was elected, the next president nominated and the meeting place for the convention decided upon.

The new secretary elected in the place of Mr. J. H. Chatterton, whose resignation was announced in one of my letters about six months since, is Mr. H. J. Sanderson, a milling engineer of Suffolk House, Lawrence Prantney Hill, London, E. C. Mr. Sanderson was a member of the firm of Sanderson & Gillespie, who at one time had their offices at 26 Mark Lane, London, E. C., and who some years ago introduced into England the Nagel & Kaemp's system of milling, which was adopted in a number of flour mills. Mr. J. F. White, LL. D., of Dundee, was nominated as president for the forthcoming year and when the election takes place next month the National Association of British and Irish Millers will have secured one of the most eminent representatives of the Scottish milling trade. The Council resolved to hold the convention of 1890 in Edinburgh and the local committee have since fixed on the middle of July as the time of meeting.

The third annual meeting of the National Association of Master Bakers and Confectioners will be held at Belfast on Tuesday and Wednesday, the 10th and 11th of this month, when the following six subjects will be considered and discussed:—

1. A paper will be read by T. W. Hibbard, a well-known miller of Gloucester and examiner to the city and guilds of London, on "Flour Blending."
2. A paper, entitled "Practical Chemistry for the Bakehouse" by B. J. Williams of Edenderry.
3. A Scheme for a Training College for Bakers by J. Kirkland of London.
4. Discussion on the council report, respecting the proposed formation of a Scientific and Practical Institute for Bakers and Confectioners.
5. A paper on the Labor Question.
6. To consider the Bread Laws and Weights and Measures Act of 1890.

It is expected that this meeting will be attended by a large number of bakers and millers from all parts of the Kingdom and some valuable information brought to light.

It will be remembered that some little time since I reported the result of the trial of Van Gelder, Apsimon & Co. *versus* The Sowerby Bridge Flour Mill Society, in which Mr. Henry Simon, who is defending this action on behalf of his clients, succeeded in obtaining a verdict in his favor on account of the plaintiffs not being able to get the mortgagees to agree to being parties with them in the case. The plaintiffs have appealed against the decision of Mr. Justice Kike-wich and have succeeded in having the verdict reversed to their favor with costs. There is some talk of the decision of the Appeal Court being questioned in the House of Lords, which is the highest court of all and whose decision is final. When the point of law is settled the case will be proceeded with, but it will, I am afraid, be sometime before the case is settled. In the meantime the amount of money being spent is very large. Mr. J. H. Chatterton, late secretary to the National Association of British and Irish Millers and present secretary to the London Flour Millers' Association, has lodged an appeal against the decision given in his case, which I mentioned in my last letter, and it will come before the courts next session.

The death of Mr. S. Charles Hadley in his 60th year took place on Thursday, the 15th of May. The late Mr. Hadley was a member of the firm of Hadley Brothers, which for many years successfully worked the City Flour Mills in Upper Thames St., London, E. C., and was the first president of the National Association of British and Irish Millers.

The report presented to the London Corn Trade Association at the annual meeting held last month showed that appeals are falling off, that the principal business of the year has been done as usual by the East Indian committee. The meeting was marred by one disturbing element. Eight members of the old committee retired by rotation and there were only two new names proposed—those of Mr. Dreyfus, the head of a firm in London and Paris, and of Mr. Lucy, the leading Gloucester merchant, whose connection extends to all the Bristol trade. An unanimous election might ordinarily have been expected, but not one of the eight retiring members would give way, but all stood again, being allowed it seems by rules to do so. The Corn Trade Association is financially very prosperous. The subscription is rather high, the arbitrations and appeals are not gratuitous to members, and samples are charged for, while the wheat from which they are made up is a gift. The society, according to their balance sheet, have now over £2000 in hand and they were able to vote 100 guineas as a gift to the Corn Exchange Benevolent Society and twenty guineas to the "Cereals," that young institution which, under the smiling face presented at its farcical and

musical entertainments, hides a practical feeling of pity for the less fortunate members of the corn trade. Many struggling clerks are assisted out of its funds and that in so quiet a manner that shame is spared, and no reputation of previous difficulties stands in the way of the man once started "on the upline."

The site of the great Tower in London has been fixed in the neighborhood of St. John's Wood, in immediate contiguity to the Metropolitan Railway. The other day by the invitation of the directors of the Metropolitan Railway, a party of gentlemen proceeded by special train to inspect the spot. It is intended to begin building operations as soon as possible, in the hope that early next year the tower may be opened to the public.

The Vienna Agricultural Exhibition was opened during the second week in May by its patrons, the Emperor in the company of all the court and the ambassadors. Since 1867 there has been no agricultural exhibition in Vienna, and therefore great importance is attached to the present one, as it will show the progress made during the last twenty-three years in Austrian agriculture.

L. MAYGROVE.

LONDON, June 2, 1890.

[Written for THE UNITED STATES MILLER.]

THE MILL BUILDING.

BY "DE FACTO."

IT apparently seldom occurs to parties building new mills, in their endeavor to prepare for a strictly first-class mill, to provide a suitable building for it. It would appear that it were time to give the matter of building more serious thought and consideration. The prevailing idea seems to be that it is intended merely as a covering or shelter for the machinery it contains, with a foundation possibly that will hold it erect. We make a fine art of the combination of machinery and make it an indisputable clause in the contract with the mill furnisher to have the same accurately and well finished, using the best of material throughout. But as to the structure, to contain the same, or the relations between machinery and building it is generally left to chance or whim. Every common-sense miller when contemplating the building of a mill should give the matter of building due consideration. Perhaps the principal idea is to get it strongly built, good foundation, dry basements, etc. No doubt there is considerable improvement shown in that direction, and a very essential thing is to have plenty of floor space and stories of sufficient height. We often hear large commodious buildings spoken of as barns. There are barns, no doubt, that would make more suitable buildings for mills than the structures sometimes put up for the purpose of a mill, would answer the purpose of a barn.

"Buildings too small" was one of the serious and prevailing faults when long reels were still in use. Now that the reels have been shortened at least one half it is not uncommon to find buildings put up that much shorter or narrower, as the case may be. The size of building in nine cases out of ten is decided on by the miller or party building the mill. He probable estimates the size of the house to correspond with certain sized timbers he has in view. The mill furnisher in the majority of cases will not dare to change his views, but will pronounce it a wise selection and convince the party that his machinery will fit the building "like the paper on the wall" as the clothing man says, and very likely it will come as near hugging the wall as the coat did the man, without the necessity of taking in any surplus to convince the miller. Rather have the building a misfit by having it larger than actually required for the time being. It will not be many years before the reserved portion will prove an absolute necessity.

A wise plan, as a matter of course, is to have complete drawings made of building showing location of every machine, and proper calculations made for making connections with spouts to conform with flow sheet. The run of spouts is a matter too often neglected. They are generally run directly across passage ways, even though a slight alteration would have given the spout sufficient pitch and left the passage way open. Often a nest of three or four spouts will practically take up as much space as any machine in the mill. It would appear that this ought to be an important feature to be considered in making a contract. If it takes a few more elevators to carry out the flow sheet and run the spouts with some due regard for getting around them and thereby add to the expense, it can easily be provided for. The chances would be that while the mill furnisher is planning to get every dollar of profit out of the transaction that he can, "the party of the second part" (to use a legal expression) will stand some show of at least getting within "sight of the promised" outfit of machinery when set up.

A well arranged mill has machinery of the same kind together as near as possible, for instance rolls on the same floor, purifiers, reels, cleaners, in fact every class of machines within easy reach from one machine to the other. Such an arrangement not only makes a better appearance but makes work easier for the miller. In this way the elevators, shafting with all necessary attachments can be arranged with greater system. Provision should be made that in each class of machinery other machines can be added on, when necessary and be within easy access of driving shaft. There is one important fact that every miller building a mill must not lose sight of and that is that all mills are subject to many changes, and if there is hardly room enough left to turn around and walk out after having the mill completed, the chances are that any alterations or additions made in the future will prove very expensive.

No matter how well finished a line of machinery may be or how much pains is taken in setting it up, unless a person can easily get around it, it will be offset by machinery of plain finish accessible and in plain view from nearly every point. It is forever important to have stories of good height.

CONVENTION NOTES.

J. W. THROOP, of London, Eng., will be in Minneapolis through the Convention.

NEARLY all Milwaukee millers will leave here for the Minneapolis Convention June 16.

THE PRINZ & RAU Mfg. Co., of Milwaukee, will have an exhibit of Cockle Separators and other machinery.

THE EDW. P. ALLIS CO., of Milwaukee, will be represented by Mr. William Allis, W. D. Gray and J. F. Harrison.

MR. REUTHER, of Reuther & Reisert, manufacturers of the "Chronos" will represent his house at Minneapolis.

THE SUPERLATIVE PURIFIER CO., Vortex Dust Collector Co., and The Cockle Separator Co., will be well represented by Mr. Cameron.

CATARRH, CATARRHAL DEAFNESS—HAY FEVER. A New Home Treatment.

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 337 and 339 West King street, Toronto, Canada.—*Christian Advocate*.

Sufferers from Catarrhal troubles should carefully read the above.

MILLERS' NATIONAL ASSOCIATION.

The New Constitution as Amended.

WE present herewith the new constitution amended, as proposed, which will be submitted for adoption at the Minneapolis meeting. This will give all members an opportunity of thoroughly examining it before the meeting of the Association and enable them to make such suggestions as they think will improve it.

DECLARATION.

This Association is formed for the purpose of promoting the welfare and prosperity of the millers of the United States; for mutual protection against patent litigation; for securing uniform action in all matters affecting the general good of the trade; for correcting the abuses which hamper it, and for encouraging and building up a common union for the common good.

CONSTITUTION.

ARTICLE I.

Section 1. This Association shall be called the Millers' National Association of the United States.

ARTICLE II.

Section 1. Any person, firm or corporation engaged in milling in the United States may become a member of this Association upon signing an application for membership, wherein the name, capacity and location of the mill are correctly stated, with the understanding that said Association shall not be called upon to defend any patent suits already commenced; or any suits on machinery in the said mill, which may have been obtained outside of agreements or contrary to the arrangements made by this Association and also that said applicant accepts and agrees to the provisions of this constitution.

Section 2. Such application must be accompanied by a sum equal to ten dollars for each hundred barrels or fraction thereof actual capacity per twenty-four hours run of the mill or mills owned, controlled or operated by applicant. It must be delivered to the secretary who shall present it to the executive committee at its first meeting after date of application. When application is approved by the executive committee the applicant becomes a member of this Association, and the Secretary shall issue to the new member a certificate of membership.

Section 3. Certificates of membership shall be transferable only to the successor of the owner or operator of the mill specified. No holder thereof shall transfer his certificate to any other mill of which he may become the owner or operator, except in case of removal of machinery from one plant to another, or in case of rebuilding after destruction by fire or other cause, in which cases the certificate of membership may be cancelled and a new one issued without cost to correspond with the new mill or new location after approval by the executive committee.

Section 4. "Representation in this Association" shall be upon the basis of a unit of capacity, such unit being equal to 100 barrels per twenty-four hours when operating to full capacity.

Section 5. In transacting the business of this Association in Convention, all voting shall be by *viva voce*, unless a vote by capacity is demanded, in which event voting shall be by states, each state being entitled to one vote for each 10 units or fraction thereof, of its membership in this Association.

Section 6. Certificates of membership shall be issued to all mills which are represented in this Association by members in good standing at the time of the adoption of this constitution, without cost to them.

ARTICLE III.

Section 1. The administration of the affairs of this Association shall be vested in its officers, a board of directors and an executive committee.

Section 2. Each State having a state millers' organization which is allied to this National Association, and embraces not less than twenty-five units of capacity holding membership in good standing in this Association, shall be entitled to one representative in the Board of Directors.

Section 3. The Directors of this Association shall be elected by their State Associations at their annual meetings, and each Director shall remain in office until his successor is elected or appointed, so long as his State Association shall be entitled to representation in the Board of Directors. In case of the resignation or death of a member of the Board of Directors, his successor shall be named by the State Association in which vacancy has occurred.

Section 4. The Board of Directors shall meet upon the last day of each annual Convention of this Association and shall elect an Executive Committee of five from among their number. Seven Directors shall constitute a quorum.

Section 5. The Executive Committee shall meet at least every three months and shall be further subject to the call of the chairman of their committee or upon the written request of three members thereof. Three members of the Executive Committee shall constitute a quorum.

Section 6. The Executive Committee shall have general charge and direction of the affairs of the Association and shall direct the secretary and treasurer in the discharge of their duties. It shall have full control of the finances of the Association, and shall determine upon all points affecting its policy. It shall be empowered to order suits brought or defended and to employ legal assistance when deemed advisable. It shall have authority to order assessments from time to time and to instruct the secretary to draw on members for such assessments. It shall appoint annually a secretary at a certain fixed compensation. The chairman of the executive committee shall make a report at the Annual Convention of the Association

tion to the members showing the transactions of the committee for the year in full.

ARTICLE IV.

Section 1. The board of directors shall, at its annual meeting, appoint from among the members in good standing the following committees of five each to serve for one year:

A committee on patent litigation.

A committee on transportation.

A committee on export trade.

A committee on domestic trade.

Each of these committees shall meet immediately after its appointment and elect a chairman who shall call a meeting of his committee at such times and places as he may deem desirable.

Section 2. The committee on patent litigation shall investigate all claims for infringements brought against members of this Association, and report on same with their advice and opinion as to the merits of the case and the policy to be pursued, to the executive committee.

Section 3. The committee on transportation shall investigate cases of unjust railway discrimination, unwarranted delays in transit, improper delivery of freight and matters affecting the shipping of flour by rail or steamer brought before it by members. It shall have in charge all questions as to bills of lading, both foreign and domestic, and shall report on such matters to the executive committee with advice as to the proper course to pursue.

Section 4. The committee on foreign trade shall have in charge questions affecting the relations of the miller and the foreign buyer. It shall examine into cases of unjust arbitration on American flour in foreign countries brought before it by members. It shall investigate claims of millers against foreign buyers. To it shall be referred all recommendations, suggestions and complaints of foreign flour handlers regarding American flour. It shall report on such matters to the executive committee with advice as to the action recommended.

Section 5. The committee on domestic trade shall investigate and report with its recommendation to the executive committee on all complaints of domestic buyers brought before it by members. It shall consider all cases of tricky and irresponsible dealers, cancellation of orders on flimsy pretexts, delays in domestic transit, brand imitations and all other matters affecting the domestic flour trade.

Section 6. The president of this Association shall be elected at the annual meeting of the Association and shall hold office for one year. It shall be his duty to preside at all meetings of the association, attend all meetings of the board of directors and the executive committee. He shall be an ex-officio member of both.

Section 7. The first vice president shall be elected at the annual meeting of the Association and shall hold office for one year. It shall be his duty to act in place of the president in his absence.

Section 8. The second vice president shall be elected at the annual meeting of the Association and shall hold office for one year. It shall be his duty to act in place of the first vice president in his absence.

Section 9. The treasurer shall be elected at the annual meeting of the Association and shall hold office for one year. He shall receive all monies due the Association and shall disburse same on warrants signed by the secretary and countersigned by the president. He shall make an annual report to the Association showing its exact financial condition. He shall furnish a good and sufficient bond in such sum as the executive committee shall approve.

Section 10. The secretary shall be appointed by the executive committee and shall act under its direction.

ARTICLE V.

Section 1. The annual meeting of the Association shall be held at such times and places as shall be determined by the executive committee. Special meetings may be called by the executive committee if in its opinion circumstances require them. The executive committee shall arrange order of business in advance of a general meeting. The reports of the officers of this Association shall be presented at the annual meeting.

ARTICLE VI.

Section 1. The expenses of members of the executive committee to and from all general and special meetings of the Association and regular or called meetings of the executive committee shall be paid by the Association. Such expenses shall include only railway fare to and from such meetings and hotel bills during continuance of meeting, at a rate not to exceed three dollars per day.

Section 2. The expenses of the president, while traveling on business of the Association shall likewise be paid, same to include only railway fares and hotel bills at rates named in preceding section.

Section 3. The expenses of all regular and special committees authorized by this constitution or appointed by the executive committee shall be paid at the same rate and on the same conditions as those of members of the committee itself.

ARTICLE VII.

Section 1. The annual dues of this Association shall be three dollars per unit of capacity. They shall be payable on the fifteenth day of January of each year.

Section 2. The secretary shall make sight draft for annual dues on date above stated. Should such draft be unpaid the member so drawn upon stands suspended until the following annual meeting where the names and amounts due and unpaid shall be read and such members shall be dropped from the Association. Notice of contemplated action shall be given to members in arrears thirty days before the annual meeting.

Section 3. The executive committee shall have authority to remit the annual dues for members who appeal to it and may at its discretion make exceptions to the provisions of the preceding sections relating to annual dues.

ARTICLE VIII.

Section 1. This constitution may be altered or amended at any annual meeting by a two-

thirds vote of the members present. The proposed amendment must be submitted to the secretary at least thirty days before the annual meeting, and he must notify members by mail of the proposed change.

[Written for the UNITED STATES MILLER.]

THE CHOICE OF AN ENGINE.

By OBSERVER.

F late years the steam-engine has been steadily supplanting the water wheel as a prime motor. Even where water power is plentiful and cheap, it often becomes necessary to put in a steam-engine to supplement the work of the turbine, or supply its place should the water be low.

The relative importance of the various points which should be considered in purchasing an engine, differs according to the special purpose for which the engine is required. Under some conditions one point would be more important than another, while with changed circumstances exactly the reverse would be true. The first consideration is generally economy of steam. If an engine does not utilize economically the force developed in the boilers, not only is the amount of fuel required greatly increased, but a larger size of engine is necessary to accomplish a given amount of work. This increases the first cost as well as the running expenses, including oil bills, cost of firing, interest on the plant, and so on.

In this connection may be mentioned a very common mistake among steam users—that of buying and using a much larger engine than they need, in the expectation that an enlargement of their business at some future time will necessitate the employment of the extra power. This is not economy but extravagance.

It would be far better to put in an engine suited to the work required from it at present and then enlarge when it becomes necessary, and the question of how much power is needed should by no means be left to guess-work, but in the absence of sufficient mechanical knowledge on the part of the prospective purchaser to make the necessary calculation for himself, experienced engineers should be consulted who can make them for him.

In flour-milling, regularity of speed is essential. As a rule it may be estimated as second in importance only to steam economy. Where an establishment is very crowded and more especially in marine engines, compactness of construction becomes of very high value, but the miller will not, as a rule, be inclined to give this consideration much weight.

So far as it goes, simplicity is a desirable quality in an engine, but if it be gained only at the expense of either of the two qualities first mentioned it would be dearly bought. More important is it that the engine be durable, possessing no weak spots which are liable to "give out" unexpectedly.

MILWAUKEE ITEMS.

THE Edw. P. Allis Co. have also taken the contract to increase the capacity of the capacity of the Imperial Mill at Duluth to 2,500 bbls. per day. In Wisconsin they have just contracted to increase capacity of Merrill Mill Co.'s mill to 100 bbls. per day; a new 75-bbl. wheat and rye mill for Warnke Bros. of Germania, and a new 50-bbl. mill for Henry Timmer at New Holland.

THE Milwaukee Boiler Co., a new corporation, has purchased the entire boiler plant of Richard Davis (Marine Boiler Works,) and T. L. McGregor, and will soon have the largest boiler building establishment in the West. The following gentlemen are the officers of the company: Edwin Reynolds, President; James S. Church, Vice President; B. T. Leuzarder, Secretary; T. L. McGregor, Superintendent; William W. Allis, Treasurer; Charles Allis, Ass't Treasurer.

A good story is going the rounds on 'Change at the expense of a member. He recently received a package of fine pickerel

by express from a friend out with a fishing party. Meeting a friend just after examining them he said: "By George! That fishing party—Louis Auer, Leuzarder, Ed. Silverman, and a lot of other good fellows you know, must be having a grand time. Why—I have just got from them one of the finest boxes of speckled trout you ever laid your eyes on. Why—some of 'em are — that long," extending his hands about a yard apart. The astonishment of the listener needs no comments.

Among the contracts taken during the past month by the Edw. P. Allis Co. is one for remodeling entirely the Crown Roller Mill at Minneapolis, at a cost of about \$35,000. As re-arranged the mill will contain only belt rolls, all of the Allis manufacture. The new machinery to be introduced will consist of 32 9x24 double Gray rolls, 20 No. 4 Gray flour dressers, 8 Reliance scalpers, 8 Reliance graders and 10 Gray centrifugal reels. Five breaks are to be made on wheat. The job is to be completed within 60 days after work is begun. The Christian & Bro. Mill Co., the owners, furnish all the help required, and the Allis Co. furnishes the superintending millwright. When completed this mill is guaranteed to be equal if not superior in construction to any flour mill in the world.

TRADE NOTES.

W. J. FENDER, of Minneapolis, will soon place a new scalper and grader on the market.

THE Jno. T. Noye Mfg. Co., Buffalo, N. Y., are extensively engaged in manufacturing electric equipments, including engines.

THE Morgan Mfg. Co., Buffalo, N. Y., have a new slow-roll drive on exhibition, the invention of Mr. Morgan. It is said to do away with belts and gears and to be positive and noiseless in operation.

CORRESPONDENCE.

A MILL WANTED.

Lamar, Colo., June 4, 1890.

EDITOR UNITED STATES MILLER:

Acting upon suggestions made at our meeting last evening, I submit the following statement of facts which I trust you will give place in an early issue, expecting that among your numerous readers some will "catch on."

Lamar is the center of the newly established Bent Land District and county seat of Prowers County. This is our first agricultural year. We have in operation over 200 miles of ditches and canals, and growing crops are looking exceedingly well. We have 7,500 acres wheat; 3,500 oats and barley, and also corn, etc. We want a *flouring mill*, and can give a good show to any one who will build one. Will give any further information gladly. Address Yours truly,

GEORGE T. HERBERT,
Sec'y Lamar Board of Trade.

AUTOMATIC SPRINKLERS.—When automatic sprinklers reach that point of perfection as to put out every fire, or fire departments reach that efficiency as to never let a fire spread, then there will be no need of fire insurance companies. The fact is that, despite all the criticisms of automatic sprinklers, and a good deal of it by persons who would not know an automatic sprinkler if they found it in the road, automatic sprinklers are the best devices for extinguishing fires in their incipency that have ever been invented, and they have done enough good work and saved an amount of property that warrants this statement in the strongest terms. The picking out of an occasional failure of the sprinklers from causes other than their own operation, and citing them as mistakes of insurance companies in reducing rates because of their presence, is not business-like. There are many cases in which companies have largely profited by making a reduction for sprinkler equipment.—*Cincinnati Price Current.*

[From our Regular Correspondent.]

OUR BALTIMORE LETTER.

The Tri-State Convention and the Butterworth Bill—its effect on Millers, Farmers and Brokers—"Oriole" (a prominent member of the Baltimore Corn and Flour Exchange) "Reads the Riot Act" to bumptious millers.—A regular Baltimorean Blast.

THE published proceedings of the Tri-State Convention at Fort Wayne, Ind., May 14th, contain some very interesting reading, but none more so to us than the debate on the Butterworth bill. A month ago we endeavored to show at some length in these columns the importance of speculation in grain, and the direful results which would inevitably attend the passage of this obnoxious measure, but never dreamed that subsequent events would so soon establish and confirm our position. Speaking on this subject in our last letter we said, among other things that, as we understand it this bill has for its object, primarily, the revolution of our present system of grain trading, for the alleged reason that it causes low prices, and is consequently a detriment to our agricultural interests. In other words, the advocates of the bill would have us believe that with no more option or speculative trading values would soon gain a higher level and maintain it for all time to come.

No greater fallacy, however, in our opinion, was ever advanced by sensible men.

We can readily see where the change would be of incalculable benefit to the millers of the country, but fail absolutely to understand how it could possibly do the farmers any good, an element whose condition really the bill ostensibly proposes to enhance. We are aware that many attribute low prices to speculation, but we are not prepared to believe it while confronted with the fact that those markets which indulge mostly in the practice, Chicago, New York and St. Louis, are the highest in the country to-day.

Take away speculation and you necessarily reduce competition. Millers and exporters then would control the situation and dictate terms accordingly. Prices then in the nature of things would rule low until our cereals were controlled by these two interests, and after that the Lord only knows what the consumer would have to pay for food.

Speculation encourages trading on every fractional change in the market, which of itself creates a steadiness to values not possible under any other condition.

Where the farmer has a thousand buyers for his product now he would have about ten only under the proposed new system.

We notice to their credit that the millers even are divided on the propriety of abolishing speculation, for where would they hedge against their enormous holdings from time to time unless as heretofore stated they bought them sufficiently low to require no hedging. Millers and exporters are satisfied to carry large supplies where they can sell a corresponding amount of options against them at a carrying charge premium, but should this be impossible the farmer would then have to bear that expense himself or else market his product at a figure which would insure the purchaser against loss.

Fluctuations in the absence of speculation would be violent, as heavy receipts would mean ruinous rates and light ones the reverse.

Speculation is the only remedy for all these evils, and to abolish it at this stage means suicide to the very interests which the bill seeks to benefit.

With this brief summary in mind of what we said a month ago we invite the reader to go with us now to the Fort Wayne convention, and hear what a champion advocate of the bill has to say there concerning it. First of all remember, please, that the bill in question is not in the interest of the miller, but of the farmer, whose condition alone it seeks to improve upon the theory that in the absence of speculation higher values could be obtained for cereals than with it.

That is the only point at issue, and with that distinctly borne in mind, we quote the utterances of a miller whose candor and honesty are only equaled by his lack of judgment, to say the least.

Here is what he says: "Now, Mr. President, there is one point that I have not heard mentioned, and it is because of that point that I am in favor of the passage of the Butterworth bill. What influence is it that stands between the wheat of the West and flour man of the East that leaves the miller with but a very thin margin of profit? Is it not because No. 2 wheat, which every miller of us has to grind, is worth more to-day for speculative purposes than it is for milling? Isn't that true? It causes more competition in the handling of wheat.

This Butterworth bill is aimed to take away this competition between the producers and the manufacturers in the handling of wheat, and therefore I am in favor of this resolution."

And then again we quote from the same authority, where, further on, in answer to an

interrogatory of how millers were to handle large receipts profitably without recourse to option hedging, he says: "Buy your wheat cheap enough, so that you can afford to borrow money and hold it."

Of all frank confessions and cheeky avowals these probably stand without a rival!

Of course in the light of them the resolution favoring the Butterworth bill passed the convention by a large majority, but we are positive that even Mr. Butterworth himself laughed outright when he learned of the real motive which actuated the endorsement of his pet hobby by this august assembly.

The champion of the bill at Fort Wayne made a bad break and showed the cloven foot completely.

In a word he and his friends favored a measure which has for its only object the betterment of the farmer's condition, but which he openly admits, would have the reverse effect should it become a law, and for that reason voted for it.

Under the pretense then of befriending the farmer, he and all others who voted for the resolution on the same ground, are not only hostile and antagonistic to his interests, but are actually doing all they can by their own admission to make his condition even worse than at present.

What a philanthropic spirit!

What a rare and noble incentive!

Fortunately for the world at large all millers are not cast in the same narrow and selfish mould, as some even at Fort Wayne gave evidence, but there are those who can rise higher than personal aggrandizement when subjects of national importance are discussed. We need no further vindication of our position on the Butterworth bill than that just cited, and if the measure is not already dead nothing more should be necessary to kill it than the farce enacted at Fort Wayne last month.

"What strange things we see when we have no gun," and the strangest of them all are the cranks who periodically bob up in conventions and blackguard millers' agents and brokers in general.

We have noticed, however, that those most guilty of the practice, and loudest in their denunciations, are generally those without occupations and proprietors of cross-roads, back-woods, run-down-at-the-heel grist mills, whom no decent broker would represent at any price.

We have read with considerable indignation the latest tirade on brokers from these sources, and while it amounts to nothing more really than the yelping of a little yellow dog at a lightning express train, we can not, however, resist the temptation in passing to squirt our contempt on the cur that did the barking at Fort Wayne.

Here we have a foul-mouthed, blatant ass who confesses that he never employs brokers for the reason that he can always dispose of his flour himself without assistance, which, as usual, we presume amounts to a shirt-tail full daily, and yet he goes out of his way to slander and vilify every broker in the business without reserve. Indeed, his accusations are of a very serious character, and sufficient, we think, to warrant his prosecution for libel.

Among other things that he said we quote the following: "But if they (the brokers) can manage to swindle the man from whom they get the flour they will do so." And then again: "You cannot make a broker honest unless you can make it to his interest to be so."

There is no qualification about that statement, but an open, deliberate and sweeping charge that all flour brokers are swindlers and thieves. As a member of the brokers' fraternity we take exception to the cowardly arraignment, and denounce and brand it as a base, low, mean and malicious lie, and at the same time demand its retraction or qualification at once.

If the scoundrel who made the villainous attack has any honor or decency in his composition he will speedily make reparation for it. The honor and integrity of every reputable broker and millers' agent has been grossly assailed, and we for one will not calmly submit to it without a vigorous protest.

It is astonishing to us that the better element of the milling trade which employs agents does not have more consideration for its representatives than to allow such calumny billingsgate and vituperation heaped upon them in its presence on all occasions.

We now appeal to all such to appear for us hereafter, and shield our fair names from the assaults of the slanderer.

If the member who speaks in convention on the subject is too cowardly to particularize and name the rascals that have victimized him, then muzzle him, rather than permit him to defame the characters of innocent men. But, to revert to the stigma put upon us. May we not ask from whence did the party derive his information, if, as he admits, he has had no dealings with brokers? If he has never been duped by them what

then is his grievance or provocation for such talk? Isn't it the height of presumption, to say the least, for such an one to air his sentiments in public places concerning an element of which he is confessedly ignorant? Would it not be more becoming to leave that task to those more closely allied with brokers? All brokers are not honest, we admit, neither are all millers, by a large majority, but we do insist that there is as much principle and integrity among them as a class as is found in any other walk of life, and we say it without fear of contradiction.

No miller employs a broker unless it is to his interest to do so, and in most cases he renders more than value received.

Brokers are an absolute necessity, else they would have long since been dispensed with by the leading mills of the country, which show their appreciation of them by requiring their services continually. No mill is obliged to retain an agent for a single day longer than it sees fit, so why this great hullabaloo then every time a convention meets?

If you are dissatisfied with your agent or think you can do without his services why in the name of common sense don't you fire him? He has no mortgage on you. There is no power compelling you to keep him.

But where is the fairness in forever abusing the whole fraternity because you don't happen to admire the system?

To our mind it is clearly a piece of spite-work emanating principally from millers having no agents, but who, jealous of the influence and patronage enjoyed by brokers, seek thus to injure them at every opportunity.

It is seldom that we hear the voice of complaint from a large mill, however, but, on the contrary, it is almost invariably from the small fry that the wail of lamentation comes, and it is easily explained, too. Mills making hundreds and thousands of barrels daily need a broker in every market for the reason that competition is so great and demand so erratic that it requires the constant attention of a man on the spot to watch and hold the trade after it has once been made—mills having large capacities must have all the strings to their bows possible, in order to find an outlet for their flour, and this can be accomplished only by having an agent in every town.

Traveling salesmen are seldom at hand when wanted, and consequently lose many orders on that account; and then again their salaries, hotel bills and railroad fares combine to make it too expensive for him to compete successfully with most mills. Mills grinding less than a hundred barrels per day have no use for a broker, of course, as they can generally dispose of that quantity at home and through correspondence with eastern buyers.

The reputable broker then is a great institution for the big fish as he is beyond all doubt the best and cheapest medium through which the trade is reached. The trouble is that many mills expect something for nothing, and in the attempt to find it rummage round the universe and engage the very off-scourings of creation to represent them at starvation rates, and the consequence is they get swindled and we are glad of it. Another of the smart Aleck brigade goes a step farther, and rather than pay a broker ten cents to sell his flour he does it himself at twenty-five cents less usually than the market value, and what the agent would have obtained for it—but he saved the brokerage all the same! These are among the little things that sour the miller, but, after being deceived and "picked up" at his own game, to play the baby act and make the sweeping assertion that all brokers are rascals, is too contemptible for anything in the world.

A broker's lot is not a happy one, as he must needs stand between two fires incessantly, and in that perilous position it requires considerable ingenuity sometimes to keep peace in the family.

The miller has no better friend in the world than the broker, and he will find it out too, sooner or later. The audacity, affrontery and gall of the knave, therefore, who casts such virulent abuse and aspersions upon us at Fort Wayne, should receive the censure and condemnation of every right thinking miller in the country.

In the future let all such tongues be bridled or we will know the reason why.

We believe in free speech, but in no such license as that referred to.

We brokers have made a record that we are not ashamed of, and upon which we propose fearlessly to stand in the future, the whining of the pups to the contrary notwithstanding.

BALTIMORE, June 12, 1890.

LOOSE PULLEYS.

There is no particular part of the average machine that there has been more discussion about or had more curses heaped upon it than the loose pulley.

While it has few friends among the operators of machinery, yet no one has been able so far to discover any substitute that will successfully supersede it and be applicable in every instance. Such devices as have been applied have not fully met the expectation of the users, but on the contrary have developed other objections of a different character quite as objectionable in the end as the much abused loose pulley.

The principal fault with the loose pulley, and one that is a fruitful cause of the trouble complained of, is not so much the fault of the pulley itself as it is in the manner in which they are constructed. In most cases the facilities for oiling them are bad. A suitable receptacle should be formed in the hub of every loose pulley and the hole supplied with a convenient thumb-screw or other suitable stopper so that after the oil is applied it can not be thrown out as soon as started.

But, after all, the greatest cause for loose pulleys becoming hot and cutting themselves out, as has often been the case, is in the unreasonable tension of the belt as is found to be the case with many wood-working machines. It would seem that very little attention was given to the proper size of the driving pulleys and in a majority of cases there is not sufficient driving surface to these pulleys to operate the machine successfully with a reasonable belt tension. If the manufacturers would be more particular in this respect, and furnish their machines with driving pulleys, containing more frictional surface, either by enlarging the diameter or increasing the width of face so that there would be ample power to drive them with a slack belt, and then devise some more effective and ample manner for retaining the oil in the hub besides the shallow and useless hole, there would be much less trouble and complaint about loose pulleys.

THAT WINONA FIRE.—President B.P. Armstrong has given the Winona-Flour-Mill loss careful investigation and gives the following as a reliable account of the details of the fire:

"The mill was very large and very high, and sheathed on the inside of the studding. On the west side of the mill the openings had been used to blow the dust through into a dust-house in the top of the mill though a short time ago this practice was abandoned. From this and natural causes the concealed space between the studding became filled with dust. The fire originated in some shavings in front of the boilers and communicated from the roof of the boiler-house to the mill, the fire wall only reaching up to the rafters, it being bricked in between the rafters. The fires had been banked for about an hour and one-half, the doors and windows were all open, and hard heads being necessarily in use in the boiler room, the sprinklers acted rather slowly, though the fire in the boiler house was all extinguished by them and the aid of the hose. Had the boiler house been properly cut off from the mill there would have been little or no loss. About the time the fire was extinguished below, it was discovered that fire was breaking out in the fourth story of the mill. The firemen fought it bravely, but it had gained too great headway unperceived, and the difficulty of getting at the fire and the inflammability of the dust permitted the fire to spread and soon drove them from the mill. I do not think that any fault should be laid to the sprinklers, but that it was wholly the defect in construction which was remediable."

A SUBSCRIBER to the Telephone Exchange asked to be placed in connection with his medical man. Subscriber—"My wife complains of severe pain at the back of her neck, and occasional nausea." Doctor—"She must have malaria." Subscriber—"What's best to be done?" At this moment the clerk at the central station alters the switch by mistake, and the unlucky husband receives the reply of a mechanical engineer in answer to inquiries of a mill owner: Engineer—"I believe the inside is lined with excoiations to a considerable thickness. Let her cool during the night, and in the morning before firing up, take a hammer and pound her vigorously. Then get a garden hose with a strong pressure from the main and let it play freely on the part affected." To his great surprise the doctor never saw his client again.—Electric Age.

ESTABLISHED 1846



❖ EAGLE FLOURING MILLS. ❖

J. B. A. KERN & SON, Merchant Millers,

Capacity 2,000 Barrels Per Day.

MILWAUKEE, WIS.

Manufacturers of Choice Minnesota and Dakota Hard Wheat Flour.

RYE FLOUR

By most approved roller process, guaranteed the best and purest rye flour manufactured.

WE INVITE CORRESPONDENCE FROM CASH BUYERS.

FAIST, KRAUS & CO., Duluth Roller Mills

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—MANUFACTURERS OF—

CHOICE * PATENT * FLOUR

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Capacity 1,500 Barrels Daily.

Foreign and Domestic Correspondence Solicited.



DULUTH ROLLER MILL.



DAISY ROLLER MILL.

Capacity 1,500 Barrels Per Day.

Daisy Roller Mill Co. MILWAUKEE, WIS.

—MANUFACTURERS OF—

Choice Spring Wheat Flours

EXPORT BRANDS:

"TIP TOP" * "BUTTERFLY"

HYDRAULIC TESTING OF BOILERS.

Many attach undue importance to the hydraulic testing of boilers, yet a little reflection should serve to show the essentially unsatisfactory nature of such tests. Hydraulic pressure is pressure regularly applied and equally distributed; in its application there is little (or no) sudden variations in the stress, and the temperature of the water is, practically, constant. It is not so under steam. Unlike water, the elasticity of steam greatly varies, and its action not unfrequently partakes of the nature of a veritable explosion. Unlike water, the heat of steam has a sensible influence upon the molecular condition of the boiler metal. Under water pressure, a boiler is subjected to but one regular, direct set of strains; and the boiler's own condition of plate, rivet and seam remains constant, also. How different when a fierce fire is raging under the boiler, and distributes, it may be, its heat unequally. Then the boiler is racked and

pulled about in all directions. Every difference of length and of thickness in the parts then tells, giving a different strain; and every variation of temperature does the same. The expansive force of metal under such conditions is simply enormous, and of an entirely different character to that exerted by hydraulic pressure, which, beside it, is of an altogether mild and placid order. A boiler with small unforced cracks and as brittle as glass might stand the hydraulic test, if the test is not of long duration or frequently applied. Hydraulic testing is good enough in its way but should be always accompanied by a thorough examination, in which not only the eyes should be critically used but every other means suggested by experience to the engineer. In this connection the services of a light hammer will be found invaluable. Use the hammer freely and smartly. If there is any crystallization of the boiler metal, a sharp rap, deftly applied, will often find it. As a

full and final test of boilers the hydraulic test must, however, be condemned as illusory, misleading and dangerous.—*The Stationary Engineer.*

HOW THE BUTTERWORTH BILL WILL AFFECT FARMERS.

AN Akron, Ohio, miller, in reply to a letter of inquiry from a Chicago commission firm as to whether a certain lot of wheat was wanted, writes: "This wheat costs us a little over \$1.02 in our mill, and no miller in Ohio can grind it at that price without serious loss. If the Butterworth bill should become a law (and be enforced) we might use your wheat to advantage, but so long as speculation keeps the price so much above its value we shall fight shy of spring wheat."

The Butterworth bill was introduced and pressed as a measure wholly in the interest of farmers, and the most urgent plea in its behalf was that speculation depressed the value of farm products and

should on that account be made odious. Yet here we have a miller writing from his heart that speculation is lifting wheat values so high that millers cannot manufacture flour at the prices except at serious loss. When the Butterworth bill passes, however, things will be different. There will be no speculation to make an intermediate market for the farmers, and millers will be able to obtain wheat at such prices as they may dictate.

Speculation makes Chicago the best market in the world for farmers throughout the west and northwest. Ten months of the year Chicago prices are relatively higher than Liverpool prices. And why? It is simply because the speculative capital is carrying the load that the producers themselves could not carry. Speculative capital anticipates the wants of the manufacturer and consumer. If the markets eventually settle back in harmony with the views of the millers and foreigners the loss falls, not upon the farmers, but upon the speculators.—*Daily Business, Chicago.*

BOILER CLEANING BY MAGNETISM.

MR. W. B. BULL, Superintendent of the Quincy, Ill., Water-works, at the Convention of the American Water-works Association, held in Chicago, May 20, read a paper on "Boiler Cleaning by Magnetism," from which we make the following extract:

"The operation of magnets upon steam boilers was not a mechanical but a chemical one, it was the water in the boiler, and not in the boiler itself, which was affected. I constructed a simple device, consisting principally of a tubular or hollow electro-magnet, operated by a dynamo as heretofore, through which hollow magnet the feed water was made to pass on its way from the feed-pump to the boiler. Fortunately I was able to attach this apparatus to a brand new boiler, and after nearly a year of use it has been pronounced by the inspector on his subsequent and recent inspections as being entirely free from scale, both shell and tubes. This is one of my own boilers and a part of the battery which gave more or less trouble from scale until I began employing magnetism as a preventive.

A wish to still further simplify this machine and to render it perfectly automatic and independent of attention on the part of the engineer led me to experiment in the direction of substituting permanent steel bar magnets as a source of magnetic energy, in place of the more complicated dynamo and the electro-magnet, so that, as I now prefer to construct this machine, it consists of an iron cylinder ten inches in diameter or less, dependent upon the service it is to render, and about twelve inches long. This cylinder is strong enough to resist all reasonable pressure, has flanged heads and is set on the feed pipe, preferably before the feed water enters the heater (if there is one), as a current of hot water flowing over the magnets which are kept in position by the cylinder is weakening to them. Water of the temperature of 100 degrees or less does not impair the strength of the magnet, which, if treated in accordance with a few easily met conditions, may be considered as substantially indestructible.

The life of a compass needle may be cited as a type of their probable durability. The magnets are arranged within the cylinder just referred to in sheafs or bundles; they are made of straight bars of hard steel (not horse-shoe in shape), and are somewhat separated to allow of their proper relation to each other, and to permit an uninterrupted passage of the feed water. In a cylinder of the size referred to ten inches in diameter, there are about 150 magnets made of one-quarter-inch steel one inch in width and of varying length, from three to ten inches.

The apparent effect of the process, that is to say, of passing the feed water through an intense magnetic field thus produced, is to change the relation previously existing between the water and the mineral impurities held by it in solution, so as to destroy their scale-producing properties, and the mineral impurities seem to be thrown down to the bottom of the boiler in what I call 'slush.' For example, an excellent opportunity for a test presented itself in the shape of a boiler in use in a lime burning establishment near Quincy, Ill., the boiler in question being fed from a well at the edge of a lime stone quarry, the water being perfectly clear, and to the eye free from organic matter and all visible impurities, but under the usual well-known tests for such things showing excessive and unusual hardness even for well water in a limestone region. It was in fact so bad that the tubes in this particular boiler were renewed twice a year as a rule on account of the scale which formed on them. The proprietor of this boiler told me that in cleaning it every fortnight he usually found some loose scale in the bottom which unequal expansion and contraction had detached, and a small quantity,

less than a handful, of what looked like sand. After the use of the magnets for ten days, a heaping shovel full of this sand or disintegrated scale was taken out, and after two more weeks not less than three shovelfuls of the same was removed, mixed with fragments of friable scale. This was at the last cleaning about ten days ago.

The boiler, I ought to say, was a small upright boiler from six to ten horse-power, and the scale which they were in the habit of removing was as hard as Portland cement; it broke with difficulty and had almost a cutting edge. In contrast with this the scale which came down under the action of the magnet was so friable that it crushed easily between the fingers, and could be reduced in one's hand to the condition of fresh mortar or plaster, it being of course, wet when first taken from the boiler. Inside the boiler, reaching through the hand holes, it could be scraped off the shell with the bare fingers much as one would scrape fresh mortar or plaster from a newly plastered wall. The soft material and sand-like deposit which was found in the bottom of this boiler was quite free from any mixture of mud as the feed water was perfectly clear, and the deposit afforded excellent opportunities for examination. Under a microscope the particles seemed to be of crystalline structure, the crystal having more length than breadth, like fragments of dog-tooth quartz.

The scale that was thrown down, if carefully handled, on account of the great friability and weakness, presented under a strong glass the most interesting illustration of what was taking place. The best comparison I can think of is a block of ice which has stood in the sun until it has become, as we say, 'needled,' and ready to break up in long spiculae or needles, something we have all seen a thousand times. So it appeared with these scales; a little pressure with the finger on the palm of the hand would reduce them to the sandy particles which made up the mass of what came out of the boiler. Scales from the same boiler and feed water, it should be noted in this connection, before the use of magnets, were like hard, fine-grained sandstone, and showed under the glass a homogeneous structure. In a word, the action of the magnetized water upon the scale already formed in this boiler, and also in another very dirty boiler to which I successfully applied the magnetizer, was to destroy the 'bond' of the scale so that it became weak and rotten like worthless mortar or cement, and in condition to readily disintegrate and fall down in slush or fine particles under the action of the currents in the boiler, or otherwise."

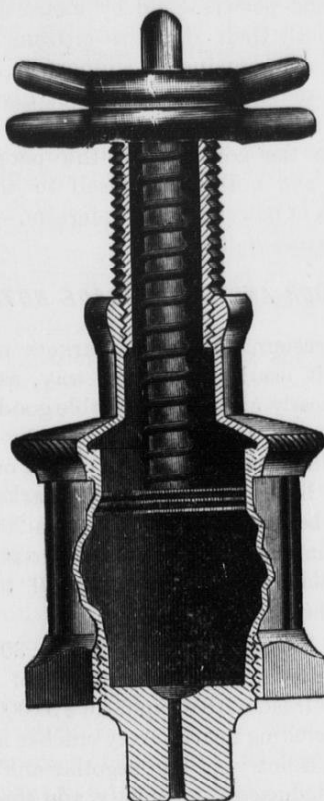
CONVICTED BY A PIECE OF BREAD.—A tramp named Lianty has been condemned at Blois, France, for the murder of an unfortunate woman whom he met on the high road. He attacked and stabbed her repeatedly afterward throwing her into a pool while she was still living, first taking from her her little savings, amounting to 60 cents. The peculiarity of the case lies in the evidence that convicted the murderer. On the bank of the pool near the spot where the corpse was discovered there was found a large piece of bread, the end of the loaf, with a singular bulge at one side. One of the neighbors testified that on the morning of the day the crime was committed Lianty had come to her house to beg for something to eat. She gave him a glass of piquette and a hunch of bread. He drank the wine and put the bread in the breast of his blouse, saying that he would eat it later. The loaf she had cut it from was home-baked. One of the bricks in the floor of her oven was missing, so that in each batch of loaves there was a protuberance marking the site of the missing brick. It was this protuberance that enabled her to identify the bread found near the body with the piece she had given Lianty. He was forthwith found guilty and condemned to death.

COMPRESSION GREASE CUPS.

THE accompanying cut shows an improved Compression Grease Cup adapted to nearly every kind of machinery lubrication.

To place the cup in working order a thread should be cut on the shank, and Cup screwed into the box, the journal of which is to be lubricated. Unscrewing the chamber of the Cup from the bottom, leaving the bottom on the bearing, the shell is inverted, allowing the piston to fall down when the threaded nut and spring are removed.

The Lubricant is placed in the shell, and screwed into the bottom which was left on the bearing, the spiral spring replaced, the threaded nut, or follower, is then forced down until it engages the thread in the neck of the cover.



By this means the spiral spring is compressed and its expansion forces down the plunger, causing the grease to be forced down upon the journal.

The advantages arising from using a cup of this kind are apparent. There is no frictional heat required to liquify the lubricant, hence there is no loss of power, and as heat in metal means expansion, the bearings are very liable to be injured.

The feed is uniform, as the tension of the spring is easily regulated by the threaded follower.

These cups are manufactured either in brass or iron, by The Wadhams Oil and Grease Co., of Milwaukee, Wis., and they guarantee a saving of 25 to 50 per cent. in the cost of lubrication where these cups are used, on crank pins, dynamos, pillow blocks, shafting, etc.

Special Correspondence of the UNITED STATES MILLER
PRACTICABILITY IN MILLING.

THE question is often asked by outside people why the milling business is in such an unsettled state and the complaint so universal among the trade regarding short and small margins. It is the opinion of the people in general that milling is a very steady business and very profitable. To those inside, or more correctly speaking in the business, the cause is very plain, it is simply because the business is and has been overdone. People have rushed into the business without any previous training or knowledge of the business, without investigating the status of the undertaking relying on their smartness and business tact to defy any competition that they may find. A little consideration and close questioning on the part of unfortunates ought to have convinced the most of them that the outlook was anything but inviting for those outside of the business without any knowledge of the business and who as a consequence would be forced to rely entirely on hired technical experience. The last five or six years there has been capacity enough

on the North American continent to cut up every grain of wheat produced in any one season in three months if run to their utmost capacity. Any one who has the ability to conduct a flour mill could, if they desired, be in possession of this fact, and without doubt they have been well aware of this, but have relied on natural smartness to down all competitors regardless of who they are or their experience. It is not necessary that every one owning an interest in a flour mill should be a miller, a competent engineer and a first-class financier, but it is necessary that some practical experience in all these matters should be well-known in order to be guarded against the cock and bull stories so common among the fraternity. If one has no experience, common sense should prompt one to associate oneself with some parties who would have a monied interest in the concern and also experience. Very seldom, however, do people take advantage of this fact; money associates itself with money or with office experience and technical experience is hired at so much per day. It seems to us that if a practical knowledge of the milling business is a necessity to beginners, it ought to be of some value to even those who have been in the business a number of years. Seldom, however, do we find a really practical miller having a monied interest in any of our mills, while office experience has been taken into firms by the score, the practical millers so situated can be counted on the fingers even embracing our whole country. Technical experience of the highest type is seldom to be found, of course it is sometimes, but it is very rare and it seems to us that when found it should be better protected and valued than it seems to be at present.

It is not enough for a man of the highest type with a life-long experience to be paid from day to day even at the highest wages, who is improving the property under his care and who feels that any time his income may be cut off entirely through circumstances beyond his reach; he ought to feel that he is a fixture with his company, one of them, and this cannot be reached without he has a direct financial interest in the institution. What is the point? Simply that there ought to be in the organizations of milling companies a competent practical miller to whom all matters of a practical nature should be referred, and in this way and only this way can the best results be attained and proper security be given to competent technical experience.

What!—give a man without paying for it ten thousand dollars worth of stock? By no means. Simply do for the miller what is often done for the clerk, place some stock in his name to be his when paid for. In this way you give him some security regarding retaining his position and you also give him a great inducement to save his money. Tens of thousands of dollars have been squandered by tearing out machinery that was as good as that put into its place simply because of the lack of technical knowledge in the office and the reputation and business of first-class mills have been destroyed because of the inability of the managers to recognize proper ability when under their nose.

To sum up, it is admitted by every one that a blacksmith is the most competent person to conduct a blacksmith business, also of the tinker and the tailor and the candle-stick maker in their respective spheres, but the most competent man to conduct the affairs of a modern flour mill is an office man, simply because he can add up a column of figures a little faster than the man who never has the opportunity. It is our belief that to be successful under the present conditions of the trade a thorough practical miller is a necessity to all milling establishments and in this only can we get the best a man can do.

A. M. P.
Memphis, Tenn., June 7, 1890.

THE FARMERS' WAREHOUSE SCHEME.

THE Farmers' Alliances are zealously pushing their bill for the establishment of warehouses for farm products, to be operated by a Government Sub-Treasury Department, and have recently approached several leading Senators not in sympathy with the proposition, in an endeavor to make influential converts. They have met with no visible success, but have had to submit to some searching analyses of their scheme, with particular attention to its mistaken conception of the Government's functions.

It is not probable that the political weakness of the measure will weigh much with its proposers. In reply to the argument that it would involve the Government in an enterprise quite outside of its real functions, the farmers can point out that just such principles as underlie it are at work in other directions, and that a majority of our legislators are favorable to their operation. They can in fact allege with truth that no new departure is proposed, but only an extension of the paternal propensities of Congress exercised for years past to a class hitherto quite neglected. If the measure were only likely to prove servicable to the farmers by relieving them from the burden of carrying their crops during a period of low prices, arguments on a political basis would avail little.

In any endeavor then to combat this development of socialistic government it is necessary to prove to the farmers that, so far from the warehouse scheme being likely to benefit them, it would certainly result in a range of prices for farm products lower than would rule under natural conditions. Take wheat as an example. Among the variety of causes affecting prices, the visible supply exercises a constant influence. Farmers' stocks, or the invisible supply, weigh but little. Anything then which tends to increase the visible supply unduly, at the expense of the invisible, inevitably tends to depress values. There is nothing more certain than that the establishment of the Sub-Treasury warehouses would draw into sight early each season and keep in view for months large supplies which only now appear gradually. The market would be face to face with tangible realities in the form of enormous stocks in warehouse ready to flood the market on every rise in price. It may be urged that advanced prices draw out these supplies at the present time. Admitting this, it must be conceded that such supplies are thrown on the market gradually, and if in greater quantity than can be readily absorbed the excess goes to increase the visible supply, with the effect of speedily arresting the advance. It is when these supplies become visible that they are potent factors in the situation.

The farmers allege that they are suffering year after year from the controlling influences of speculators, who persistently depress the price of farm products by option trading. If this be true, no better help to these speculators could be devised than the warehouse scheme. We have shown that the natural effect of an abnormally increased visible supply would be to depress values. One other result would be to place the farmer more completely than ever at the mercy of powerful operators. The sums advanced on the grain deposited in warehouse, being presumably for immediate necessities, are not likely to be repaid by the farmer, and he would, in fact, part with his produce when deposited just as really as though he had sold it outright, with this difference, that instead of obtaining cash value he would receive a percentage only of that, with his certificate left to represent the balance. This certificate alone would be left for sale, and instead of having to buy the grain and pay for it, speculators would take their certificates, and with the inability of redemption

staring him in the face it can easily be conceived that the farmer would let them go at a nominal price. It would be a clear case of speculation made easy, with the farmer out of the game at the very beginning.

It may be asked what we have to propose in place of it. We reply, nothing whatever. The whole principle of government interference in such matters is pernicious, and, in such a country as ours, another admission of ignorance of the first laws of national polity. The farmers may realize that the functions of a national government have been prostituted to furthering class legislation of the worst kind, but they can never better their own condition by seeking to aggravate the existing evil. The remedy is to crush it entirely, and to such a work they can lend powerful aid by exercising intelligently their rights as citizens at the polls, and refusing to support in future any candidate who does not give sure proof that he is desirous of helping to govern the country for the people at large, and not lend himself to the demands of powerful class interests.—N. Y. Commercial Bulletin.

FLOUR AND GRAIN TRADE NOTES.

IN eastern Canadian markets millers have it nearly their own way, as they hold nearly all of the available good milling wheat. In this province only a few straggling loads at several of the outside points have been brought to market, the whole being insufficient to keep a 200-bbl. mill running. The prices paid to farmers at outside points ranged from 91 to 93c.—Winnipeg Commercial.

The *Minneapolis Journal* of May 30 gives the particulars of the formation of a big cracker trust, with a capital of \$10,000,000, and including nearly every cracker maker in the country. The negotiations have been conducted very quietly, and the facts have been so well concealed that very few persons outside of those directly interested know of it. There has been a pool in operation for some time, profits being divided on an agreed percentage, but this has proved unsatisfactory and the trust is the result. It is to conduct the entire business of the concerns interested, stock to the amount of \$10,000,000 being issued in return for the transferring of the individual properties.

THE Senators from South Dakota have received a petition from a number of their farming constituents begging them so to amend the Tariff bill as to give the growers of wheat, corn, rye, oats, barley, etc., a sufficient bounty per bushel, like that proposed in the McKinley bill for Louisiana sugar growers, to make it profitable for them to keep on raising those cereals. The petitioners say they see that a bounty it to be given the men who grow sugar cane in Louisiana because they cannot make a good profit without it, and they don't see why the wheat growers of the Dakotas and other Western States are not entitled to the same consideration as Louisiana sugar planters. There is one point which the petitioners omit to make—that is, that for a century the Government has given an equivalent for bounties to the growers of sugar cane, but the latter with all the encouragement they have had at public expense are not now able to furnish as large a proportion of the sugar consumed in America as they did half a century ago.—Chicago Tribune.

THE *Modern Miller* (Kansas City) says: May 9 was the inauguration day of the grain export business from the port of Galveston, and a large number of people, upon invitation of Messrs. Reymershoffer, proprietors of the Texas Star flour mills, gathered at their elevator to witness the loading of the first cargo of bulk corn upon the steamer Propitious. The corn was consigned to Liverpool, and on the same day in the warehouse where the ceremony was being held there was being accumu-

lated a cargo of white corn from Kansas in sacks for shipment to Mexico. Addresses were made commemorative of the event, and statistics were given showing the amount of corn, wheat and oats raised in the vast territory tributary to Galveston, and which on the completion of the the harbor improvements would be turned in that direction. "The result of this work," said Mr. L. N. Levi, one of the speakers, "is beyond actual competition in its proposed benefits to our friends and neighbors of the West in giving them an outlet for their surplus product of grain through Galveston as the natural outlet to the great highway of commerce, the sea."

PORTLAND FLOUR TRADE.—A new steamer line is about to be established between Portland and Japan, and the latest advices in regard to it indicate that the first steamer will start from the last-named country about May 15, arriving in Portland about June 1. "The prospects for this line of steamers securing business for this port are very good," says the *Portland Oregonian*, "and it is not at all probable that they will seek any other terminus. The flour trade with China and Japan is rapidly increasing. The Portland Flouring Mills Company is now shipping by every steamer from 5,000 to 10,000 barrels, which is twice the amount shipped the last year, and is more than any one concern in California is shipping, probably more than any two companies in that State. The reason for this is that Oregon can furnish a better article of flour and at less price than California, and will therefore continue to secure more and more of the China and Japan trade. The shipments of flour so far have been principally to Yokohama, Hong Kong and Shanghai, but a part of the last shipment made by the Portland Flouring Mills Company goes to Singapore, away down by the south end of the Malay peninsula, and only a little over one degree north of the equator. This shows that the trade is extending, and it is not unreasonable to suppose that, in say ten years, China and Japan will take the whole output of flour of the Pacific coast. Heretofore this coast has been at a disadvantage as compared with the East, in consequence of having to ship its wheat and flour around Cape Horn and over to England to find a market. When the 'teeming millions' of Asia get in a way of using flour, we shall have a market for all our flour, and one in which the East cannot compete on an equality."

NEWS.—THE Duluth Board of Trade has accepted the invitation of the millers to be represented at the millers' national convention, and elected the following delegates: Col. C. H. Graves, B. C. Church, F. S. Daggett, G. G. Barnum, Ward Ames, T. A. Olmsted and J. C. Hunter.

OMAHA is to have a 1,000,000 bushels elevator to be built by the Omaha Elev. Co.

A 100,000 bushels elevator is being erected at Argentine, Kan., near Kansas City.

President Armstrong says there will be a 15 per cent. salvage on the entire insurance.

NEAR Honesdale, Pa., May 10, E. E. Bunell's flour mill was burned. Loss \$8,000; insured.

W. S. McMILLAN, of Rochester, N. Y., is to have a 200 bbl. roller mill built this season. It will be first class in every respect.

AT Lemont, Pa., June 3, fire destroyed the grain elevator and coal shed of J. I. Thompson. Loss \$5,000; Insurance \$1,820. Origin unknown.

N. M. WELLMAN, of Woodlawn, Kan., will remove his milling machinery to Armourdale, Kan., where he will soon have a good mill in operation.

MAY 18, Isaac Myers' mill and elevator at Laconia, Ia., was burned with 25,000 bushels of corn. The mill had recently been refitted. No insurance.

NEAR Orangeville, Ohio, May 14, the large flouring mill of Hendrickson & Son was burned to the ground, causing a loss of \$18,000; insurance, \$5,000.

J. & J. TAIT of Taitsville, Mo., have abandoned their mill and will move to Polo, Mo., where they will build a 60-bbl. roller mill of approved design.

AT Harlem, Pa., May 13, incendiaries fired E. Gery's flouring mill at midnight, and the building and contents were destroyed. Loss, \$10,000; insurance \$6,000.

JEFFERSON, Texas, has suffered the loss of its flour mill which was burned on May 8. The money value of the mill, wheat and flour was \$20,000, and the insurance was only \$5,500.

MARTIN, GLOYD & BURR's Crown roller mills at St. John, Kan., were completely destroyed by fire, on the night of April 28, with a loss to the owners above insurance of \$3,000. The mill will probably be rebuilt.

WISCONSIN and Minnesota stave manufacturers met at Eau Claire, Wis., June 10. It was decided to advance the price of staves one cent, and headings one-half cent. A meeting for thorough organization will be held in Eau Claire, July 8.

JOHN M. CAIN of the "Central Mills" in Atchison, Kan., has been running his mill steadily and satisfactorily. Mr. Cain does considerable export trade and has done considerable missionary labor among brother millers to get them to exporting also.

AT Mansfield, Mo., June 5, G. W. Freeman's flour mill was burned down about midnight. When the fire was first discovered it had reached such a stage that it could not be stopped. Everything burned to the ground. Loss about \$20,000; no insurance.

FLOURING mills valued at \$10,000 and over were destroyed by fire during the month of May, as follows: Jefferson, Tex., \$16,000; Orangeville, O., \$18,000; Harlem, Pa., \$10,000; Rochester, Minn., \$50,000; Winona, Minn., mill and elevator, \$300,000; Doaktown, N. C., \$20,000; St. Louis, Mo., Laclede mills, \$125,000.

AT Jefferson, Tex., May 8, the large flour mill of Major McDonald was destroyed by fire. The wind was strong, and it was with difficulty that the foundry and the grist and cotton mills were saved. The building which was a four-story frame, and machinery are a total loss. The loss is \$12,000, besides 2,000 bushels wheat and a large amount of flour. Insurance \$5,500.

THE grain elevator burned at Mount Forrest, Ont., on June 5, was owned by Mr. McMullen, M. P., and contained about 15,000 bushels of grain belonging to E. Murphy, valued at \$8,500, and grain sacks worth \$250; insured in the royal for \$5,000. The elevator was insured in the Waterloo Mutual for \$1,000. Two Grand Trunk cars loaded with grain, alongside of the elevator were also burned.

THOMAS L. NORMAN, of West Point, Ga., has invented a flour barrel composed of fabric and having its upper edge turned inward, with separable and removable inner and outer rigid head sections, between which interturned portions of the fabric extend, and removable fastenings connecting the head sections together and to the interturned portion, making a light and cheap package, foldable in a small space when not filled.

THE Laclede Flour Mills, occupying a five-story building, corner of Ninth and Souldard streets, St. Louis, Mo., were entirely destroyed by fire at an early hour on the morning of May 29. The property was owned by the firm of Kehler Bros. The origin of the fire is a mystery, as the mills had been idle for some time, and were being remodeled for the manufacture of roller-process flour. The loss is estimated at \$125,000; not insured.

THE elevator at West Memphis, Tenn., built for the Kentucky Central Railroad at a cost of \$75,000, burned at 3.30 o'clock on the morning of June 9. E. C. Adams, of Atchison, Kan., the contractor who had just completed the building, and was sleeping in the second story, was lost. He was 75 years old. The origin of the fire is unknown. It was first discovered in the engine room. There was an insurance of \$25,000 on the elevator.

THE heaviest failure in Minnesota, outside the Twin Cities, in many years, occurred June 3. Michael Simmer, merchant and operator of a large mill at New Prague, made an assignment to Julius H. Ackerman, of Shakopee. The liabilities are \$110,000; the assets are estimated at \$100,000. The inability to dispose of flour on hand is given as the cause of the assignment. The debts of large amount are mostly to Minneapolis and Chicago business men.

THE Boston Flouring Mill at Lake City, Minn., owned by M. O. Crumpton, of Orlando, Fla., was, with its contents, destroyed by fire on the morning of June 8. Loss about \$10,000; insurance not ascertained. The mill was formerly owned by the Boston Mill Co., of Boston, and later on by L. F. Menage of Minneapolis, who sold it to its present owner. It had been thoroughly overhauled, repaired and renovated with the intention of starting up in the fall. It is generally believed the fire was of incendiary origin, and had been underway some hours before the alarm was given.

THE NEBRASKA MILLERS' ASSOCIATION.

THE Nebraska millers met in convention at the Capitol Hotel at Lincoln, Neb., May 15, 1890, President O. A. Cooper of Humboldt presiding and D. H. Harris of Bennett, secretary.

The report of the executive committee was read which went to show that they had succeeded in obtaining valuable concessions for the benefit of millers from various railways. A vote of thanks was given them for services and \$150 appropriated to pay their expenses. On motion of D. Schupback of Columbus a circular letter was ordered to be prepared, signed by the president and secretary and sent to all members of the Association, setting forth the benefits obtained by the lower railway rates secured by the executive committee. An assessment of \$3.00 per unit of capacity (50 bbls. per day) was ordered.

A motion of Mr. Jaeggie, of Columbus, to amend Article V of the constitution to read as follows: 'The membership for mills of fifty barrels daily capacity to be \$10, mills of fifty to one hundred barrels capacity \$15, and for mills over one hundred barrels capacity \$20,' after general discussion was agreed to.

The National convention at Minneapolis was discussed and as a result a large number of Nebraska millers will be present on that occasion. The meeting was harmonious and the prospects for a rapid increase in membership are good. Every miller in the state should join quickly.

MILLING AND MECHANICAL NOTES.

EDISON has just taken out his 500th patent for a new invention, and has also sent in nearly 300 applications for patents pending on all subjects.

An invention is the work of the brain and not of the hand; mere mechanical skill can never win in the sphere of invention. The mechanic may quietly aid but cannot usurp the place of the inventor. The line that separates them may be difficult to trace, but in the eye of the law it always subsists.

WHAT is the best color of paint to use in an engine and boiler room is the question an engineer was debating. His final conclusion led him to paint the pulleys and moving parts vermilion, the body a dark green, and the hangers a brown, the brick walls being whitewashed. The vermilion was varnished, and the effect of a line of bright pulleys in motion was very pleasing.

How fond a repair hand is of crawling in behind a machine and begin hammering away on a heavy gear with a hammer and a long crow-foot drift bar. The noise that he makes is about all the good that he is doing, and the wheel soon shows the effects by having an edge of the hub all bruised to pieces. A set of steel hook-bolts with a yoke should be kept for this purpose, so that a shaft can be forced out of a machine without making any fuss at all.

HEATED bearings may arise from a variety of causes, such as (1), Bearings of insufficient area for the pressure or strain put on them. (2) Machines run at short centers with a tight belt. (3) Bad fitting bearing or seamy shaft. Bearings too good a fit or screwed up too tight. (5) Insufficient lubrication, improper or bad oil. (6) Dust or dirt in the bearings, oil grooves too shallow, or oil-ways stopped. (7) Bearings will also stretch and pinch the shaft from being allowed to run slack or get out of line of level. (8) From oil boxes or lubricators being or becoming air-tight and preventing the proper flow of oil. (9) From the axles of all the journals not being parallel, or from the spindle not bedding surely on the bottom of the bearings. (10) From spindle or pin being sprung or bent.

CONCERNING BELTS.—Another question that comes in with considerable importance is the increased life of belts and

lacings where the belts are run slack. Still another way in which increase of tension may lessen the capacity of a belt is by stretching it in length and making it correspondingly narrower and thinner. If the belt is made narrower by the tremendous haul upon it, there is less contracting surface; and we are making a 7-inch belt to do the work of an 8-inch by putting upon it an amount of tension sufficient to stretch it in length and put excessive pressure upon journals and bearings. This excess of length, if on the lower side, lessens the arc of contact; and this, of course lessens the driving power of the belt, no matter what the other conditions. And so we see on every hand every indication points to the necessity of running belts as slack as steady drive will permit. —Robert Grimshaw in *Electrical World*.

ITEMS FROM BEYOND SEAS.

THE National Convention of German Millers will be held in Hamburg, Germany July 6—9, 1890.

EX-ALDERMAN Simeon Charles Hadley, of London, president of the British and Irish Millers' Association for the first two years of its existence, died recently in poverty. Prominent millers are raising a fund for the benefit of his family.

A STORY of superstition worthy of the most benighted districts of Africa is just fresh to hand from South Russia. It appears that in the neighborhood of Ekaterinburg, there was a country mill which had the reputation of being haunted by an evil spirit, and for that reason long remained unlet. At last it was taken by an enterprising miller, who resolved to once for all, break the spell by propitiating the offending genius. To effect this, he entered into treaty with a peasant woman, who sold him her little daughter, three years of age, and this child he actually drowned in the mill race, with the help of his man, as an offering to the evil spirit. Stung by remorse, his coadjutor in this terrible deed confessed all to the authorities, and now the miller is expiating his crime by a long term of imprisonment. It is not stated what punishment has been awarded to the unnatural mother.

J. A. A. BUCHHOLZ, a well-known milling engineer and inventor, and formerly technical editor of *The Millers' Gazette* (London), committed suicide May 13. A few hours previous he sent the following letter to the present publisher of the *Gazette*, dated at Bristol, England:

SIR,—I am about to resign the management of my affairs to other hands. In doing so I wish to address to millers of the U. K. a few remarks which I believe may benefit them as well as my successors, among whom is one who, belonging to their body, has suffered greatly in fortune and otherwise for his staunch faith in the correctness of principles now universally acknowledged, but twenty years ago scouted—if I may be allowed the expression—as heretical in the extreme.

I have made two important discoveries—Firstly, the principles of construction for obtaining accurate adjustment of journals in the two directions, which are important to millers in their application to rollers and discs.

Secondly, the principle of construction for sifting apparatus, which will probably produce the greatest possible efficiency of any given sifting material (silk, woven wire, etc.), on any given material to be sifted (break chop, semolina, etc.), and enable the accurate determination of the efficiency of such surfaces on such materials under any given conditions of working.

I fear that I have been greatly hampered in my exertions to popularize these discoveries by certain defects of character, temper, and *savoir faire*. As I have suffered, and am suffering, for these defects, I venture to indulge in the hope that they may be forgiven, just as I freely forgive those who may have opposed me with greater rigor than the circumstances absolutely demanded.

Now the following lines purpose to instruct millers how they may profit by my discoveries most easily and most surely.

The greatest obstacle in the way of utilizing those discoveries lies in the way of teaching the staff of employees the principle involved, and its practical bearings, because

extremely small quantities—indeed microscopic quantities—have to be brought under their observation, to which their training has not only not fitted, but almost unfitted them. Referring especially to rollers, the adjustment in regard one to the other of a pair of rollers to 1-10,000th of an inch produces a marked effect in the result of grinding, particularly in that form of grinding which I have termed "cracking," because the particles under treatment are merely to be cracked to sever the semolina or middlings from their branny adhesions, but are not to be reduced to flour. When rollers are worked to the above nicety, millers will be surprised at the pure quality, and the great quantity of semolina, middlings, and dunst which may be obtained from branny stuffs now yielding only low grade flour.

To enable millers to secure the results referred to, they must begin with only one or two rollers fitted according to the principles of construction I have specified elsewhere, and they must see that their men become thoroughly acquainted with the construction and handling of these machines. The best and most effective application of such "cracking rollers" is to the coarse, branny semolina produced in the "breaks," which semolina should be separated from the chops for the purpose. They are also very effective for "cracking" the branny stuffs obtained from middlings purifiers lying between the clean middlings and the light, fluffy or beeswing brans. Nibbly, or sandy stuffs, are best cracked with smooth rollers, poorer branny stuffs with fluted or scratch rollers.

The experience gained with one pair of rollers properly set to work will soon show millers how and where others may be applied to advantage.

VIENNA BREAD.—The *Bakers' Times*, replying to one of its correspondents in reference to the making of Vienna bread, says:—"The following recipe will perhaps suit you: Proportions—8 lbs. of flour, 2 quarts of milk and water in equal proportions, 3½ ozs. of compressed yeast, and 1 oz. of salt. The warm water is first mixed with the milk, so as to give a temperature of from 80 to 85 degs. Fahr. Sufficient flour is then added to make a weak sponge, not much thicker than a batter. The yeast is crumbled, mixed well in, and the sponge allowed to stand for about forty-five minutes. The rest of the flour is next added slowly, together with the salt; the dough is then thoroughly kneaded, and set to ferment for two and a-half hours. All Hungarian flour may be used throughout, or the finest spring American patent may be substituted in the sponge. The bread is glazed during baking by the introduction of a jet of steam into the oven."

THE NORTHERN SUMMER RESORTS

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BUSINESS MUST HAVE BEEN QUIET.

In Silas Wickham's sawmill, on Bowman's Creek, a robin built her nest in a queer spot last summer, says a Scranton, Pa., correspondent. The mill had been idle for some time, and late in May while Mr. Wickham, was getting ready to saw a few logs, a cock robin darted about the mill and squalled spitefully at him. Why the noisy bird was so cross Mr. Wickham couldn't make out, but he learned pretty soon after he had hoisted the gate and set the mill going. On the top of the upright saw frame mother robin had built her nest, and she was sitting on it when the machinery began to make the saw fly up and down. The quick, downward strokes came mighty near pulling the nest away from her, but she clung fast and kept her four eggs warm. Meantime the male robin darted at Mr. Wickham every few seconds and cried at him as though he had no business around there. The female bird's admirable devotion to duty, and the male robin's incessant pleadings in her behalf, touched Mr. Wickham's sympathetic chord, he said, and before the saw was half way through the log he shut the water off. He was in no hurry for the lumber, and he didn't try to run the saw again until after the robins had raised their little family. In the latter part of July he noticed that the birds were preparing to begin house-keeping anew. There were two eggs in the old nest up on the saw frame, and the indications were that mother robin would lay two more inside of three days. The water was low then and Mr. Wickham let the busy robins have the mill all to themselves. Before frosty nights came the birds had hatched and raised another brood on the old saw frame, sent them out into the big world, and taken their departure from the mill for good.

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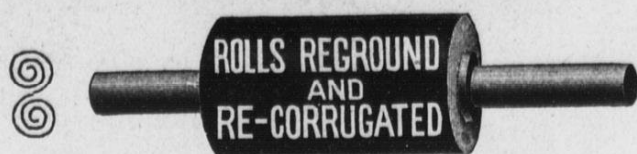
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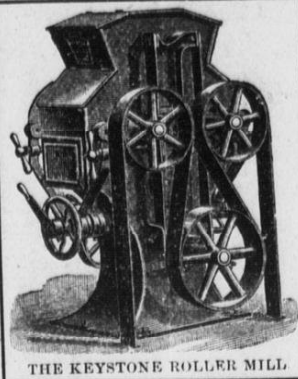
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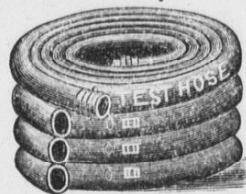
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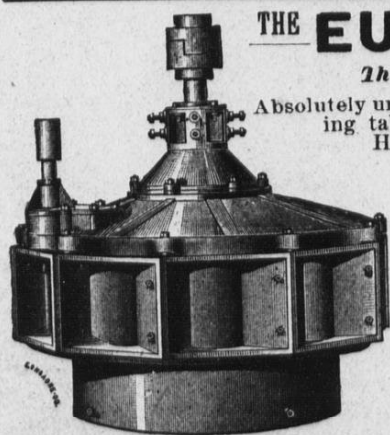
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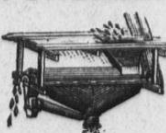
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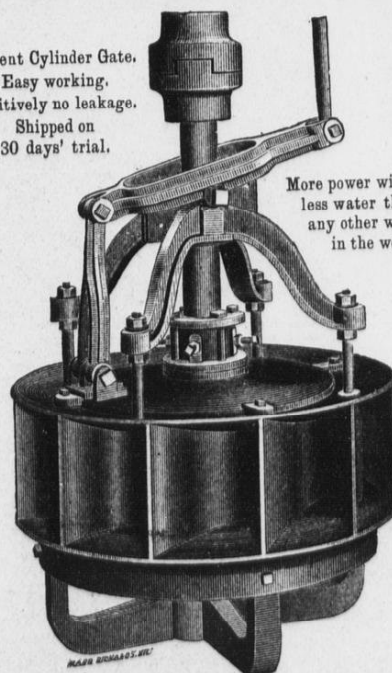
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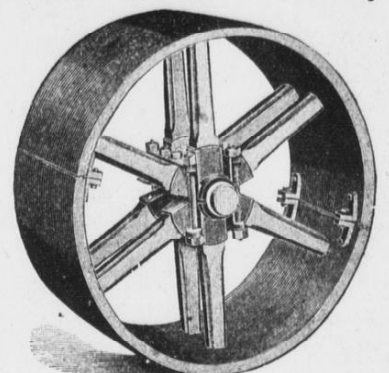
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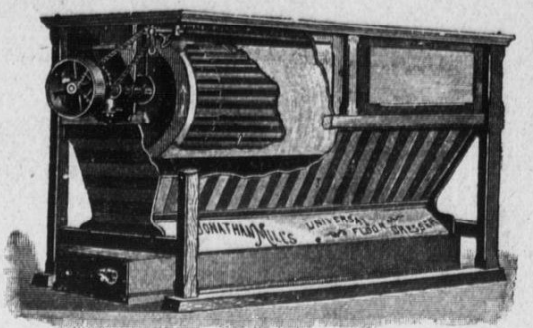
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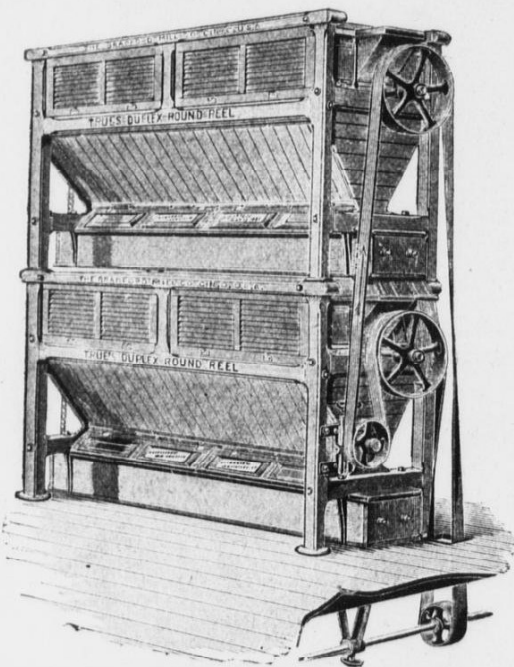
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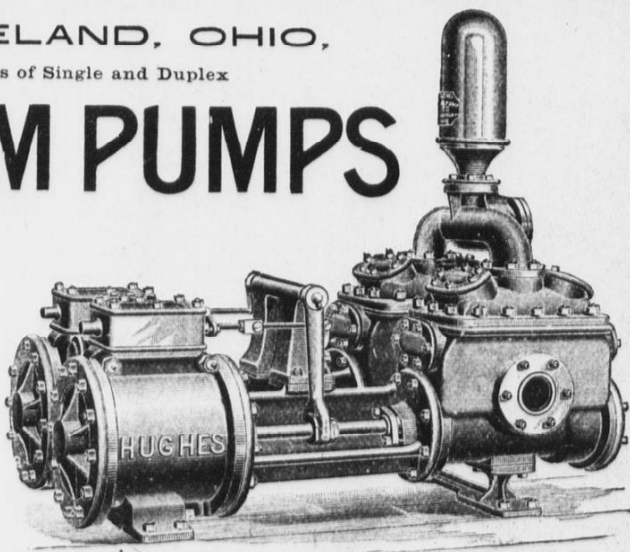
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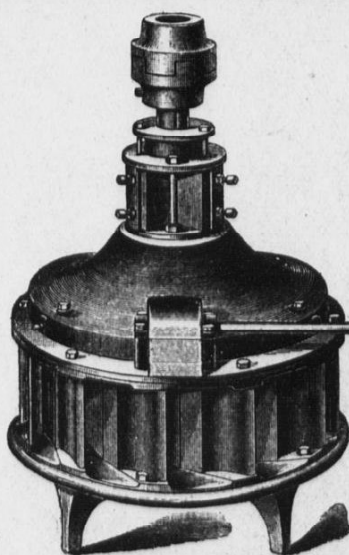
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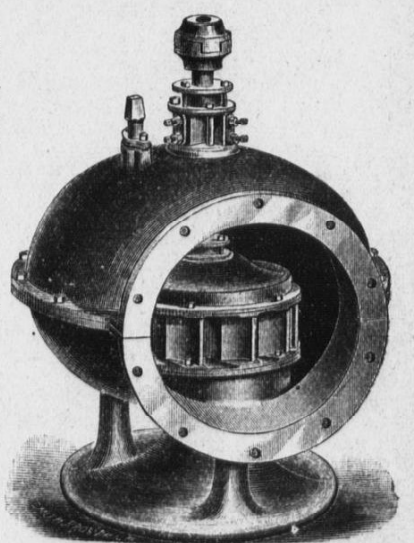
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